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14. ABSTRACT

Brooke Army Medical Centers leadership was interested in optimizing the ambulatory surgery process. Currently, ambulatory and inpatient surgeries are performed within the same operating rooms. This process has led to inefficiencies which are shown in surgery and turnover times. A trend in the private sector is the increased transition from inpatient to ambulatory surgery. An analysis conducted within BAMC showed that ambulatory surgery accounts for 55% of all surgery performed. The private sector has adopted the trend of building a freestanding ambulatory surgery center. Prior to BAMC adopting this trend, this study was adopted. The research question became "what is the most efficient method for BAMC to provide ambulatory surgery." Variables factored into this analysis included ability to expand, displacement effect, financial return on investment, graduate medical education requirements, layout, location, most surgeries performed, and time to implement. A Process Action Team was developed and six courses of action were analyzed. The study ultimately provided a three tier recommendation that spans a 10 year period.

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Running Head: Course of Action for an Ambulatory Surgical Center

Recommendation Analysis for an Ambulatory Surgical Center at Brooke Army Medical Center

Graduate Management Project Proposal

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U.S. Army-Baylor University Graduate Program in Healthcare Administration

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Submission and approval of my Graduate Management Project brings closure to this chapter of my professional career. The past two years have been challenging and rewarding. This personal endeavor was not successful by my efforts alone but is due to the many people I have met along the way.

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Introduction

Brooke Army Medical Center (BAMC), located at Fort Sam Houston, Texas, is a 450-bed health care facility providing inpatient and outpatient care to approximately 43,000 enrolled beneficiaries within the San Antonio Multi-Service Market (SA-MM). It is also the Army's only formally certified, level-one trauma center and in April, 2004, the Institute of Surgical Research, a unit under the operational control of BAMC, received verification as one of five burn centers in Texas (MAJ J. Tudela, personal communication, September 15, 2004). Graduate Medical Education (GME) is an integral component of BAMC's mission. There are over 275 students training within 25 specialties. Of the 25 specialties, seven relate specifically to surgery. The Commander of BAMC also serves as the Great Plains Regional Medical Commander, which encompasses 16 states and nine other medical treatment facilities ranging from a community health clinic to a medical center.

Changes in how an organization delivers health care offers challenges for a facility, but it may also provide opportunities for initiatives to meet beneficiaries medical needs. One such trend in health care delivery is the increased transition from inpatient surgeries to same-day or ambulatory surgeries. Procedures that were once performed only on an inpatient basis are increasingly occurring on an outpatient setting. Additionally, health care trends such as advances in medical technology and reimbursement mechanisms have contributed to the continued growth of ambulatory surgery. Couple these factors with the increase in the nation's health care expenditures ($1.553 billion in 2002 and projected to reach $3.4 trillion in 2013; a projected 7.3% annual growth rate) and health care spending will remain one of the most important

drivers of health care delivery.(Center for Medicare and Medicaid Services, 2004). In terms of the gross domestic product, health care spending is projected to rise from 14.9% in 2002 to 18.4% in 2013 (2004). Furthermore, health care is a unique market because the economic behaviors driving it may be counterproductive to its financial viability. The consumer of health care is typically not the purchaser, therefore, the motive to monitor utilization does not usually fall on the consumer. Conversely, the producer of the health care routinely determines the need for that service and within the private sector is rewarded financially for producing more of it (Kleinke, 1998). The military health care system operates differently than the private sector. Since monies received are appropriated by Congress (i.e., not earned under our current Managed Care Support Contract (MCSC)), the organization focuses its efforts on utilization and reengineering initiatives. As noted by Boland (1996), health care organizations must initiate a profound transformation as they increasingly become more accountable for improving beneficiaries' health status and quality while decreasing health care costs.

The U.S. Department of Health and Human Services Office of the Inspector General issued a report that demonstrates that ambulatory surgeries performed in outpatient settings are a more cost-effective alternative to inpatient hospital environments (Romansky & Zimmerman, 2004). Accordingly, the Commander of BAMC requested an in-depth analysis of operating room optimization. As part of that study, this graduate management project focuses on a course of action analysis on the most cost-effective method of providing ambulatory surgery for BAMC.

Conditions that Prompted the Study

The TRICARE Health Plan currently has seven MCSCs, which provide health care services to our beneficiaries. This includes active duty soldiers, their family members, and retired service members and their families. By design, these contracts are ending and the introduction of TRICARE 3.0 was intended to establish a new generation of contracts as a means to replace the existing contracts (TRICARE Handbook, 2004). The next generation of TRICARE support contracts (T-NEX) established a new governance structure by identifying service responsibility for managing military treatment facilities (MTF). The TRICARE Governance Plan established the San Antonio Multi-Service Market (SA-MM) in October 2003 (TRICARE Management Activity (TMA) Governance Plan, 2003). There are a total of 13 multi-service markets within the United States (COL M. Lupo, personal communication, November 8, 2004). This involved transitioning two medical centers (MEDCENs) and two medical department activities (MEDDACs) into one large medical market place whereby market business plans were established. Multi-service markets are the prime areas where more than one service military treatment facility is present and significant beneficiary health care costs exists (TMA Governance Plan). The intent is to improve efficiency by eliminating clinical redundancy and encouraging facilities to specialize in what they do best (Slackman, 1988). The SA-MM consists of BAMC, Wilford Hall Medical Center (WHMC), Randolph Clinic, and Brooks Clinic. MG Charles Green, Commander of Wilford Hall serves as the senior market manager who is responsible for facilitating collaborative efforts to develop a consolidated business plan for the market (TRICARE Governance Plan). Each facility established its own business plan with the

culmination of their efforts occurring in 2004 (LTC R. Julian, personal communications, September 23, 2004). The vision and mission of the SA-MM is to provide multi-service, unified, health care within the market, focusing on maximizing utilization of the direct care system (BAMC) and optimizing efficiency between the direct (BAMC) and purchased care markets (network) (Cuda, 2004; TMA Governance Plan, 2003). In order to achieve greater efficiency within and outside of the MTFs, initiatives between the MCSC and the SA-MM are occurring. For example, the Centralized Consult and Appointing Management Office (CAMO), staffed by Wilford Hall and BAMC, was established November 1, 2004. The intent was to create a market approach to primary and specialty care. Patients who are unable to make an appointment at BAMC have an appointment made for them at one of the other three military facilities (Wilford Hall, Brooks, or Randolph) instead of being sent to the network. Similarly, the MCSC sends the CAMO all requests for patients receiving primary care in the network who require a specialty care appointment. In the past, the patient made an appointment in the network instead of the MTF having the option to see the patient.

Specifically, within the direct care system, BAMC strives to increase the throughput of services by increasing workload and coding it accurately and in a timely fashion (LTC R. Julian, personal communication, September 23, 2004) while continuing to increase BAMC's capacity to meet its facility's population demands. In relation to throughput, the long-term strategic plan is to consider utilizing BAMC's main operating room for the majority of inpatient surgeries for both WHMC and BAMC (COL S. Cuda, personal communication, October 6, 2004). Therefore, efforts are focused on how to

offer ambulatory surgery. Due to time constraints, the researcher is not assessing the impact this study may have on Wilford Hall or other military facilities within the SA-MM.

Revised financing standards, another product of T-NEX, has the potential to create a competitive environment among Department of Defense (DoD) services within the San Antonio market as well as increase BAMC's costs for providing health care. Competition within the San Antonio area may occur due to an overlapping catchment area that provides similar services within such a close market. If each MTF only considers its own position within the market without regard for other military facilities, and it begins to compete for the same population or refuse to care for the other MTF's beneficiaries, sending them to the network, proper utilization of resources is not obtained (Ms. D. Rusing, personal communication, November 7, 2004). Initiatives such as the joint CAMO were established within the SA-MM to prevent this from occurring. Under revised financing, BAMC will receive PRIME capitation funding for enrollees plus specialty mission funding (e.g., such as the cost to provide care for Fort Sam Houston's student population) (TMA Governance Plan, 2004). Under this system, BAMC is financially responsible for all prime care rendered within the facility and the private sector (LTC T. Mindingall, personal communication, November 8, 2004). Prime patients are those patients who are enrolled at BAMC under TRICARE Prime. If enrolled patients seek care outside BAMC, including ambulatory surgery, the MTF incurs the cost of that care.

An analysis conducted within the Department of Health Care Operations (DHCO) shows that ambulatory surgery accounts for up to 55% of all surgery within BAMC (see Appendix A). Although later months in Fiscal Year (FY) 2004 show that inpatient

surgery begins to surpass ambulatory surgery, COL Suzanne Cuda, Chief, DHCO, attributes this to the global war on terrorism (personal communication, September 17, 2004). Since March 2003, BAMC has been experiencing higher numbers of inpatient surgeries as soldiers from Iraq and Afghanistan are sent from OCONUS to BAMC for inpatient surgeries. Since resources (e.g., available operating rooms and staff) are limited, priorities are given to those patients who require inpatient surgery. Furthermore, as the end of FY 2004 approached, concerns for money shortfalls caused the staff to decrease the number of surgeries. Ultimately, outpatient surgeries decreased, but inpatient surgeries did not.

Research shows that this trend is the same for the private sector. In 1982, only 20% of surgeries were performed in an outpatient setting compared to 1995, where nearly 60% were ambulatory (Schirmer & Rattner, 1998). Furthermore, ambulatory surgery cases that were referred to the network accounted for over $2M (see Appendix B). The number of backlogged ambulatory surgical cases, another indicator of potential lost productivity, was 746 as of November 2004.

From a productivity and management standpoint, BAMC can become more efficient by modifying its current process of providing same-day surgery. Since BAMC shows a historical trend towards an increased use of same-day surgery compared to inpatient surgery, the leadership is interested in streamlining this process. In April 2004, BG Charles Fox, Commanding General for BAMC, was informed that the Department of Surgery (DOS) utilizes more than $13 million of his supply budget; the current accounting system that captures supply costs down to each individual surgical service is not effective. CPT Forest Kim, Administrative Officer for DOS, is unable to identify which

surgery clinic within the DOS is using what percent of the total supply budget, although he is able to identify that $13 million was allocated for surgery (personal communication, September 29, 2004). Additionally, the ability to decrease the ambulatory surgery backlog and prevent same-day surgeries from exiting to the network, are important factors. Couple these factors with the introduction of T-Nex and the establishment of the SA-MM, efforts to identify the most cost-effective method to provide ambulatory surgery emerged.

Since the new facility opened in March 1996, the surgeons at BAMC have been performing all surgeries in the main operating room suite, which consists of 12 operating rooms (Wingler & Sharp, 2002). Two departments perform the surgical procedures that are most applicable to this project, the Department of Orthopedics and the DOS. The DOS consists of several specialty services that include general surgery, cardiothoracic surgery, neurosurgery, ophthalmology, otolaryngology, peripheral vascular surgery, plastic surgery, urology, oral maxillofacial surgery, and anesthesia and operative services (CPT F. Kim, personal communication, September 29, 2004). BAMC has an approved residency training program in general surgery, orthopedics, anesthesia, ophthalmology, otolaryngology, urology, and oral & maxillofacial surgery. The GME requirement is an important aspect of the organization's overall mission, which must be taken into consideration as options are evaluated. Specifically, the GME programs thrive on BAMC's 65+ population since this population provides a better training opportunity for the residents than does the healthy active duty soldier or his/her family members (CPT F. Kim, personal communication, September 29, 2004). In addition, the DOS alone is responsible for 36 professional officer fill slots (PROFIS) that impact the

overall productivity of the organization. The PROFIS requirement may take providers out of the facility for up to six months at a time. Inevitably, this impacts BAMC's ability to maintain or increase the throughput of surgery cases.

Anesthesiology and Operative services maintains12 surgical suites, where major inpatient and ambulatory surgeries are performed. This does not include the two operating rooms that are dedicated solely to the Burn Center, which performs surgeries related to burned patients, nor the two operating rooms located on the fifth floor currently utilized by the Pain Clinic. In addition to the surgeries performed in the main surgical suite, various surgical specialists perform minor procedures within their clinic areas. Eleven surgical services perform surgery in the main operating suite.

Specific to ambulatory surgery, BAMC provides same-day surgery within the context of the 12 main operating rooms. This method, commonly referred to as a hospital controlled integrated unit (Davis, 1987), utilizes the operating and recovery rooms for both inpatient and ambulatory patients. The same-day surgery center is located on the second floor as is the main surgical suite. This same-day surgery clinic is similar to most outpatient clinics in that patients present themselves on the day of surgery. Once checked in, an anesthesiologist interviews the patient, who is then taken to the pre-operative area to await his or her surgery. Ambulatory surgery is performed in the main operating room, without regard as to whether the surgery is inpatient or outpatient. Initially, the patient is recovered in the Post Anesthesia Care Unit (PACU) for Phase one recovery followed by Phase two or follow-on recovery under the purview of the same-day surgery clinic. After recovery, patients are administratively released from the ambulatory surgery clinic (MAJ P. Ahearn, personal communication, September 25,

2004). The same-day surgery clinic handles all major ambulatory surgical cases, whereas minor cases are performed in individual surgery clinics or, in the case of pain management, on the fifth floor in the labor and delivery center (MAJ R. Overbaugh, personal communication, September 27, 2004). Although research shows that most MTFs within the military health system (MHS) operate in a similar fashion to BAMC, the private sector has opted for other methods of providing same-day surgery. Currently, BAMC has no stand-alone site for ambulatory surgery, therefore, both inpatient and outpatient surgery cases are vying for the same operating room space. Additionally, because BAMC is one of only three level-one trauma centers within the San Antonio Market (Wilford Hall and University Hospital being the other two), 1 of the 12 operating rooms is dedicated for trauma patients. This is an element that BAMC has elected to meet to maintain level-one trauma certification (COL M. McAfee, personal communication, September 15, 2004). In the past, this policy did not exist and on more than one occasion, BAMC was unable to quickly turn over an operating room for incoming trauma patients. According to the American College of Surgeons (2003), the only requirement for a level-one trauma center is that the room is setup to accept a critically injured person at a moment's notice, with staff available to attend the room. Therefore, ambulatory surgery cases tend to be cancelled or rescheduled in order to facilitate the inpatient and trauma surgery needs. Through the development of an ambulatory surgery site or by establishing a contract with a private ambulatory surgical center to care for Medicare patients, the objectives established within the SA-MM can be realized.

A process action team (PAT) was organized as the GMP and analysis progressed. The purpose of this team was to discuss clinical and administrative operational considerations that were important to this project. There were representatives from the DHCO, PACU, the operating room, DOS, and the high volume surgery clinics that perform same-day surgery within the main operating room (see Appendix C).

Statement of the Problem

Ambulatory surgery accounts for over 55% of the surgical procedures performed at BAMC over the past three years (i.e., FY 2002 to FY 2004). With the introduction of T-NEX, which financially encourages MTFs to provide care for their beneficiary population as well as to begin to operate and adapt business practices such as a stand alone ambulatory surgical center similar to the civilian sector, the need to optimize the use of the operating rooms came to light. A part of that initiative was to determine the most beneficial means of providing ambulatory surgery.

Therefore, the research question is "what is the most efficient method for BAMC to provide ambulatory surgery?" The construct, *the most efficient*, is defined by the following variables: ability to expand, displacement effect, financial return on investment (ROI), ability to meet GME, layout, location, most surgeries performed, and time to implement. The members of the PAT later defined each of these variables during the decision matrix process.

This researcher will analyze six courses of action: 1) maintain the status quo, 2) build a stand-alone ambulatory surgical center, 3) partition a core unit of the main operating room for ambulatory surgery, 4) lease space, equipment, and contract staff

and have BAMC surgeons perform the surgery cases, 5) convert the Labor and Delivery space on the fifth floor to a same-day surgical unit for all patient categories, or 6) convert the Labor and Delivery space on the fifth floor for ambulatory surgery patients under 65+ years of age and have BAMC surgeons perform cases for that population in a private surgery clinic. Although the private sector has adopted the current trend of building a stand-alone ambulatory surgical center, as more surgical cases move from inpatient to outpatient, an initiative such as this may not be feasible for the MHS.

Literature Review

In order to accurately analyze each potential course of action, the concept of ambulatory surgery should be defined and a brief history should be provided. Numerous terms having the same meaning are routinely found in the literature which has lead to some confusion. The terms "ambulatory", "same-day", and "outpatient surgery" are just a few examples of words commonly used interchangeably. As noted by Davis (1986), each of these terms is used synonymously. Each simply "denotes surgery without an admission of the patient to the hospital" (p. 34). For purposes of this project, the terms ambulatory, same day, or outpatient surgery will be used interchangeably.

Burns (1984) defines ambulatory surgery as, "scheduled surgical procedures provided to patients who do not remain in the hospital overnight" (p. 2). O'Donovan (1981) defines ambulatory surgery as elective surgical care for patients who are registered, operated on, and discharged the same day. Lastly, the National Survey of Ambulatory Surgery (1996) refers to ambulatory surgery as scheduled surgical and non-surgical procedures performed on an outpatient basis in a hospital or freestanding ambulatory surgery center's general or main operating rooms. Although each of these

definitions is accurate, the researcher found that BAMC provides ambulatory surgery for trauma patients, which is not a scheduled surgery as each of the definitions describe. Of interest, 9% of all surgeries are performed on trauma patients.

Brooke Army Medical Center further distinguishes between major and minor ambulatory surgical cases. The magnitude, risks, and resources required for a 10 minute procedure performed in a physician's office differ from a two-hour procedure performed in an operating room (Davis, 1987). To identify and measure each type of procedure or surgery, the terms minor and major were adopted. BAMC identifies the degree of seriousness of each surgery by use of the terms major and minor and has separate codes to account for the workload of each (Davis, 1987; Ms. C. Whorl, personal communication, September 25, 2004). Minor ambulatory surgery denotes outpatient surgery performed in a physician's office or procedure room. An example of this would be a vasectomy where local anesthesia is used (Davis, 1987). Conversely, major ambulatory surgery is surgery performed in BAMC's main operating room. In this case, general, regional, or local anesthesia is used and postoperative recovery is routine (Davis, 1987; MAJ P. Ahearn, personal communication, September 20, 2004). Based on this analysis, and for the purpose of this study, the researcher defines ambulatory surgery as any major surgery that is performed in an operating room whether scheduled or unscheduled.

Ambulatory Surgical Settings

Just as the terms outpatient, same-day, and ambulatory surgery are used synonymously, there is more than one setting at which physicians may perform surgical procedures. There are four basic models of ambulatory surgical centers, 1) a hospital

integrated unit, 2) hospital autonomous unit, 3) hospital satellite unit, and 4) a freestanding unit (Davis, 1986). Hospitals have a high degree of control utilizing the first three models compared to the fourth (Burns, 1984). Under the first three, a hospital provides the management and resources, and establishes policies that influence the surgical center. There are specific advantages and disadvantages that each facility and physician must contend with prior to adopting one specific model.

The first model, a hospital integrated unit, may or may not have dedicated space for functions such as admitting and discharge; however, the main operating room and a portion of the recovery room are utilized for both inpatient and ambulatory surgery (Davis, 1986; O'Donovan, 1976). Brooke Army Medical Center currently operates under this model. This model offers multiple advantages. Hospitals can offer ambulatory surgery quickly with limited capital investment and the organizations are able to achieve greater economies of scale of resources since equipment, bulk storage, central processing, pharmacy, and personnel can be shared. This model also allows for increased flexibility in modifying operations (Frezza, Girnys, Silich, & Coppa, 2000). For this last reason, most hospitals that offer ambulatory surgeries perform them within the main operating room (Davis, 1986; O'Donovan, 1976). Two of the biggest disadvantages of this model are that patients feel like second-class citizens and unanticipated delays occur for ambulatory surgery (Davis, 1986; O'Donovan, 1981). Patients receiving ambulatory surgery may be delayed or even cancelled if major procedures for inpatients are extended or if a trauma case arrives. The operating room process is structured around inpatient care and when ambulatory surgery is implemented into an inpatient system, problems such as this occur and operating room

utilization may not reach its full potential. Ambulatory surgeries are routinely scheduled later in the day since inpatient surgery typically requires more time in the operating room and is awarded priority over ambulatory surgical patients (Mrs. S. Pearce, personal communication, September 30, 2004). Patients scheduled later in the day have not been able to eat since the night before which makes them feel less important than patients requiring inpatient care. If the preoperative holding area and the recovery room are shared between inpatient and ambulatory surgery cases, ambulatory patients are mixed with more critical care patients. O'Donovan (1978 & 1986) found that psychological stress might result for ambulatory patients in this case. Finally, excessive detail of medical records for ambulatory patients typically occurs because the staff is accustomed to charting for inpatient surgeries and in order to avoid missing requirements for inpatients everyone charts both surgical patients the same way. This creates more inefficiency within the overall process. However, Frezza, Girnys, Silich, and Coppa (2000) argue that there is a misconception that successful hospital-based ambulatory surgery must be autonomous. The authors state that by integrating inpatient and ambulatory surgical patients and adhering to proper scheduling techniques, significant advantages such as better use of resources and staff can be achieved.

The second model, the hospital autonomous unit (also known as the hospital-adjacent facility), is a unit or clinic that is tailor made to provide ambulatory surgery. The unit may be located within a hospital or located on hospital grounds (Davis, 1986; O'Donovan, 1981). The disadvantages enumerated for hospital-integrated units are fewer with this model. A separate facility for ambulatory surgery maximizes utilization and productivity of resources to include staff and operating rooms. As noted, the first

model was developed with the intent of treating more complicated cases, whereas ambulatory surgery is typically faster and requires less supplies. Furthermore, a facility that focuses on providing one service creates greater efficiencies since the processes are repeated many times throughout the day. This may also lead to cost savings and increased productivity since ambulatory surgery does not require the space and equipment inpatient surgery requires. This model provides space and care at the level required of the surgery. Additionally, patient satisfaction increases when the facility is focused solely around the patient's safety and comfort; this also leads to increased staff and physician moral.

Disadvantages of this model include construction or remodeling costs. Since most facilities are usually unable to build a freestanding clinic, many revert to modifications of existing space within the organization. However, if the organization is not successful in providing ambulatory surgery, the ability to utilize the space for another service is limited (Davis, 1986; O'Donovan, 1981). Another disadvantage is that additional resources such as personnel may be required which leads to increased costs. Sharing administrative support may not be feasible since the inpatient and ambulatory surgery operating rooms are usually geographical separated.

Hospital satellite units, the third model, fall under the ownership of a hospital however, the actual clinic is located away from the hospital grounds. Some organizations build satellite units in order to serve an enrolled population that is not within the hospital catchment area or to expand into other markets (Davis, 1986). The advantages and disadvantages of this model mirror those of a hospital autonomous unit however, hospital satellite units provide the potential to increase market share. More

importantly, hospitals may opt to establish a single specialty unit based on the needs of the population within that market.

The last model, a freestanding unit, is an autonomous facility operated independently from other health care facilities (Davis, 1986). Unlike the hospital satellite, this unit is administratively and geographically independent of a hospital. An example is the Phoenix Surgicenter, the first successful freestanding facility in the country (O'Donovan, 1980). Surprisingly, more than 70 centers such as this existed within the U.S. by the late 1970s (O'Donovan, 1980). One benefit of this model is the ability to meet the needs of communities that lack ambulatory facilities or communities that are geographically located far from an inpatient facility (O'Donovan, 1980). Additionally, the Orkland study found that costs incurred by the patient and the insurance company are typically lower than costs billed for an inpatient surgery (O'Donovan, 1980; Davis, 1986). Overhead or indirect costs which are those that cannot be easily associated with an individual patient, are not prorated to these patients as with hospital ambulatory units (Finkler & Ward, 1999). Advantages seen in the hospital autonomous unit is common in this model. Patient, physician, and staff moral are typically higher (O'Donovan 1980; Davis, 1986). Here, the center is built around a specific focus, which results in increased productivity and efficiency. Couple this with independence from a medical facility and the result is that policy decisions are made quicker and results are realized sooner, thereby increasing satisfaction. The two major disadvantages are the costs associated with building a freestanding facility and the lack of resuscitative equipment and personnel available (Davis, 1986). Since this facility is not within or on the grounds of a hospital, arrangements must be made in advance in

the event of a medical emergency. In today's environment of strict accreditation and certification requirements, facilities have policies in place for this potential issue.

As previously mentioned, BAMC is modeled after the hospital integrated unit. Unlike most hospital-integrated units, BAMC does have a dedicated surgical clinic that provides both administrative and Phase II PACU support. This has allowed for some flexibility and increased efficiency, however, some of the disadvantages of this model exist. For example, the nursing staff are responsible for caring for both inpatient and outpatient surgery cases. In order to maintain consistency, orders written for inpatient surgeries are written for ambulatory patients. Since BAMC performs inpatient and ambulatory surgeries in the same operating rooms, additional issues arise. As noted by LTC Leandry (personal communication, September 13, 2004) turn-around time is slower than what she has personally experienced in a hospital–adjacent facility. Additionally, the current space/rooms designed for inpatient surgery is not conducive to the effective use of personnel resources or space. For example, LTC Leandry states that it is difficult to locate personnel within the operating suite due to the number of doors exiting to the main corridor.

BAMC has 12 surgery clinics. Of those, 11 surgery clinics depend on the main operating room to perform inpatient and ambulatory surgery. Only the pain clinic performs ambulatory surgery on the fifth floor in the old labor and delivery operating rooms. Similarly, surgeons assigned to the burn unit have a dedicated operating and recovery room for burn patients.

Evolution of Ambulatory Surgery and Ambulatory Surgical Centers

Ambulatory surgery is not a new concept and preceded the establishment of hospitals. Schirmer and Rattner (1989) writes that ambulatory surgical procedures were performed before recorded history and is found in the remains of the skeletons of prehistoric man. Validation of the first recorded ambulatory surgery occurred in the kingdom of Babylon (1948-1905, BCE) and written accounts describe payment for successful and punishment for unsuccessful surgeries (Schirmer & Rattner, 1989). Much later, in 1909, Doctor J. H. Nocoll of Scotland, recognized by the British Medical Association for successfully performing 8,988 surgeries on children without an inpatient admission, is credited with performing the first ambulatory surgical cases (Davis, 1989; Burns & Ferber, 1984).

The origin of ambulatory surgery within the United States (U.S.) was credited to Dr. R.D. Waters, an anesthesiologist, from Sioux City Iowa. In 1916, he performed medical and dental ambulatory surgical procedures under general anesthesia (Davis, 1986). "The Down-Town Anesthesia Clinic provided the space, equipment, and staffing for local physicians to bring their patients for minor surgeries such as setting fractures, circumcisions, and drainage of abscesses" (Davis, 1986, p. 22). Dr. Waters foresaw the future of ambulatory surgery centers and challenged fellow anesthesiologists to develop similar centers to perform these procedures. Although a significant number of minor surgical procedures were performed outside the hospital, as the U.S. entered World War II, several factors altered this trend. The increase of surgical specialization and the physician's desire to work in a hospital surrounding took an opposite direction. The medical community viewed a hospital environment as the only appropriate setting for

surgery as quality control and peer review procedures were adopted (Schirmer & Rattner, 1998).

It was not until the 1960s and 1970s that the practice of ambulatory surgery emerged once again. At that time, hospitalization was not excessively expensive and the country began to see an increase in inpatient care. However, surgical patients were typically delayed in being admitted to the hospital due to the lack of beds. Ambulatory surgery was a means to supply what was lacking: an inpatient bed. In 1961, a surgical program opened in Grand Rapids, Michigan where 879 ambulatory procedures were performed in 1963. By 1967, that number had increased to 1286 (Davis, 1987). In 1962, a Los Angeles hospital-based ambulatory surgical clinic opened under the direction of Drs. Cohen and Dillon (O'Donovan, 1981; Schirmer & Rattner, 1998; and Paryani et al., 1995). This clinic is commonly referred to as the first ambulatory surgical center. During this time, the medical community realized that safe anesthetic procedures could be administered in an outpatient setting. More importantly, physicians began to understand that the setting was less important than selecting and screening for the right patients and the right surgical procedure for an outpatient environment.

Facilitating this upward trend were articles published by researchers identifying the opinion that patients preferred surgery performed in an outpatient environment. One study, conducted in 1961, reported that 155 of 166 patients who had an outpatient operation preferred convalescence at home rather than deal with the "discipline of a hospital" (Davis, 1986, p. 25). Additionally, the study documented that ambulatory surgery was more cost effective for the facility as well as the patient. Later that year, an article titled "Hotels or Hospitals?" (Davis, 1986) began to focus the medical

community's attention on the proper use of a hospital. Specifically, the article emphasized the decreasing need for extended hospitalizations and the need to increase outpatient services. In 1968, Dr. Charles Hill founded the Dudley Street Ambulatory Surgical Center, one of the earliest freestanding surgical centers (O'Donovan, 1976). Although insurance carriers and the U.S. State Department caused the surgical center to close due to lack of support, the interests in freestanding surgical centers continued (Paryani et al., 1995).

Drs. Reed and Ford followed Dr. Hill's initiative and opened the first surgicenter in 1970 in Phoenix, Arizona (Schirmer & Rattner, 1998; Paryani et al., 1995). Credited as beginning the first successful, freestanding, independent ambulatory surgical center, the surgicenter served as the model for the ambulatory surgical industry for the next two decades. The founder's ability to promote and elicit acceptance of this center precipitated the expansion of ambulatory surgical centers. Due to this successful endeavor, the American Medical Association endorsed ambulatory surgery given the proper use of anesthesia (Davis, 1987). A debate emerged in 1972 between the American College of Surgeons, which expressed a preference for hospital-based surgical programs and the American Medical Association. This initiated a request for private insurance companies to begin reimbursing patients seeking surgery within a surgical center.

Concurrently, Congress tasked the Department of Health, Education, and Welfare to analyze the feasibility of providing reimbursement for surgical procedures performed in freestanding clinics (Schirmer & Rattner, 1998). The Dudley Ambulatory clinic failed due to the lack of reimbursement by its insurance carriers for services

provided. The need to identify a mechanism for reimbursement for ambulatory care was necessary to ensure future success. Inevitably, the study found that ambulatory surgery can be performed safely and at a lower cost than inpatient surgery. This analysis occurred just as the cost of health care was beginning to escalate. The concern for the ability to provide care in a safe environment that was cost efficient prompted the further development of freestanding ambulatory clinics and ambulatory surgical programs within hospitals (Davis, 1986; Schirmer & Rattner, 1998).

By the late 1980s, well-organized ambulatory surgical units, both hospital-based and freestanding, evolved throughout the country, which resulted in more than 50% of the total number of surgical procedures being performed on an outpatient basis (Davis, 1986; Paryani et al., 1985). Today, more than 7 million surgeries are performed each year in one of 3,300 surgical centers (Federal Ambulatory Surgery Association, 2004). The majority of procedures are ophthalmology (27%) and gastroenterology (23%); the least number performed are associated with pain block (3%) (FASA). Not all ambulatory surgical procedures are performed in an operating room; instead, they occur in an outpatient office or procedure room.

Ambulatory Surgery within the Military Health System

Congress is continuously attempting to identify means by which it can reduce the national deficit. Consequently, the DoD is attempting to reduce health care costs by adopting health care trends occurring in the private sector while attempting to meet or exceed quality standards. According to a 1995 Government Accounting Office (GAO) report, the military healthcare system (MHS) is one of the largest health care systems (Baine, 1995). The MHS offers health benefits to 8.3 million people at a cost of over $15

billion yearly (Baine, 1995). Specifically, the report notes that the DoD is experiencing the same challenges facing the private health care sector: increasing costs. The DoD is looking to initiate cost-saving programs or best practices such as the introduction of same-day surgery.

Although the concept of ambulatory surgery is not new, it is still a new concept within the MHS. In fact, prior to 1989, BAMC did not have an ambulatory surgical program. In 1989, BAMC's Baylor resident, completed the analysis for implementing an ambulatory surgical program. She stated that the "question wasn't whether to offer a same day surgery program, but how the program should be developed" (Lyford, 1989, p. 87). During this research, various Army and Air Force medical centers and community hospitals within the MHS were contacted. The intent was to identify the current trend for the use of ambulatory surgery progress within the military. Although the interviews consist of a small fraction of the MHS facilities, it is important to mention these findings. Many of the medical centers provide ambulatory surgery similar to BAMC's hospital-integrated unit. However, with downsizing, some of the facilities that provided inpatient care have seized these services and converted them to outpatient clinics of which some provide ambulatory surgery services.

Madigan Army Medical Center (MAMC) and Walter Reed Medical Center (WRAMC) are two of the larger inpatient facilities within the Army inventory. Each of these facilities was designed to provide ambulatory surgery as a hospital-integrated unit utilizing existing operating rooms and Phase I of the recovery room. According to Mike Foster, the administrative officer for MAMC's DOS, MAMC performs approximately 725 surgeries per month, of which 68% are ambulatory (personal communication,

September 22, 2004). Like BAMC, it has a Surgical Services Center (SSC) where patients are received and administratively prepared for their same-day surgeries. Patients are taken into a pre-op area where they are counseled by an anesthesiologist and prepared for their procedures. From there, patients are taken into the main operating room. The recovery room is broken down into Phase I and Phase II. Both ambulatory and inpatient surgical patients are recovered in Phase I. After the first hour, ambulatory patients are moved to Phase II. According to Mr. Foster, the hospital integrated unit is the most feasible and efficient use of space and resources currently available to MAMC (personal communication, September 22, 2004). Since it is a large, not-for-profit, teaching institution, this design facilitates its mission. Had MAMC been a for-profit organization without a graduate management mission, an autonomous or freestanding design would have been preferred (Mr. M. Foster, personal communication, September 22, 2004).

Same day surgeries are treated just like inpatient surgeries at Walter Reed Army Medical Center (WRAMC); there is not a separate area like BAMC's same day surgery clinic. All surgical patients sign-in, conduct their administrative paperwork, and go through pre-op using the same space and staff (CPT T. Roundtree, personal communication, October 7, 2004). However, as part of the Washington Capital multi-market, Kimbrough Health Center was designed to provide the majority of ambulatory surgical care for its beneficiaries. This was in reaction to the increase in ambulatory surgical cases and the lack of space within WRAMC's current facility. Although it continues to offer ambulatory surgery, the majority of surgeries performed are inpatient. In fact, for the year 2004, WRAMC's DOS performed 2,954 ambulatory surgical cases

compared to 3,367 inpatient cases (CPT T. Roundtree, personal communication, October 7, 2004). Only 47% of surgeries are same day. Years ago, WRAMC had a hospital autonomous unit within the facility which was completely self-sufficient. However, staffing issues and physician preferences for utilizing the main operating suite caused this unit to fail and the organization converted back to its original and current design of providing surgery (CPT T. Roundtree, personal communication, October 7, 2004).

Dewitt Health Care Network is located at Fort Belvoir, Virginia, and is considered part of the National Capital Region. Dewitt provides inpatient and ambulatory surgery, with ambulatory surgery accounting for 82% of all surgical cases (LTC K. King, personal communication, October 1, 2004). Similar to the medical centers mentioned above, Dewitt has a same-day surgical center (SDS) which provides the reception and administrative requirements prior to surgery. Unlike the other facilities, Phase I is utilized for both pre-operative care (i.e., consults with the anesthesia provider) and recovery after surgery. The facility does not have a separate area for pre-op like the other facilities. Therefore, a patient moves to Phase I after conducting administrative requirements within the SDS center. There are a total of four operating rooms and the schedule or type of surgery performed is based on the specialty utilizing that operating room. Once surgery is completed, the patient returns to Phase I, followed by Phase II recovery. It was the opinion of LTC Steven Friedel, Chief, DOS, that the current design is neither efficient nor adequate (personal communication, October 5, 2004). In his opinion, an outpatient surgery center is the answer.

Wilford Hall Medical Center, located within the SA-MM area, is the local Air Force medical center for beneficiaries within an area that includes Lackland, Randolph, and Kelly Air Force bases. They too have a same day surgery clinic that sees 35 - 40 patients per day. The ambulatory surgery clinic is located on the 2nd floor, which is where both inpatient and outpatient surgeries are performed though it is not collocated with the main operating suite. Up to two weeks prior to surgery, patients go through the pre-op anesthesia unit. Here, patients meet with the anesthesiologist and necessary ancillary services are performed (MAJ. L. Seavers, personal communication, October 8, 2004). On the day of surgery, patients present themselves to the surgical center where their vital signs are taken, a health assessment is performed, and consent is given. The nursing staff uses five rooms for this function. For staffing, there are five patients to every one registered nurse or three patients to every one registered nurse if the patient is a minor (MAJ. K. Ottinger, personal communication, October 8, 2004). From here, patients change into hospital gowns and wait in the waiting room until the physician is ready for the patient to be escorted to the pre-op area located in the operating room suite (LT L. Hagen, personal communication, October 8, 2004). The pre-op area only has four beds, therefore, the PACU is utilized as a pre-op holding area for the first round of surgical cases. A technician, who is not a registered nurse, staffs this area. The main operating room, which is not collocated with the surgery clinic, is composed of 19 operating rooms. Due to staffing issues, WHMC currently operates 10 + 1 operating rooms. Similar to BAMC, WHMC is also a level-one trauma unit and has a dedicated operating room for that mission (denoted by the + 1). Like BAMC, there is not a dedicated operating room for ambulatory surgical patients (MAJ K. Ottinger, personal

communication, October 8, 2004). Wilford Hall's turn around time or time between surgeries averages 26-27 minutes, which is more than the organizations benchmark of 15 minutes (MAJ K. Ottinger, personal communication, October 8, 2004). After surgery, patients are brought to the PACU for recovery. This area has a 28-bed capacity and the staff's goal is to bring patients from the PACU back to the SDS center in two hours (MAJ K. Ottinger, personal communication, October 8, 2004). Once a patient is able to move to Phase II, he or she is escorted to the SDS unit where recovery continues in one of their 28 beds. The rooms are similar to those on an inpatient ward where care is provided from two to four patients (MAJ K. Ottinger, personal communication, October 8, 2004). The SDS unit currently operates between 0400 and 2100 hrs, however, some patients are not ready for discharge at that time. Similar to what is occurring in the private sector, a plan to provide recovery greater than 23 hours is necessary without having to admit the patient. The organization is changing to 24-hour operations and patients that require longer recovery periods but do not need to be admitted will be recovered in the SDS area.

Tour of the Methodist Ambulatory Surgery Center

Members of the BAMC ambulatory surgery process action team (PAT) visited a surgical center dedicated solely to ambulatory surgery. Methodist Ambulatory Surgical Services (MASS), located in the San Antonio area, is part of Methodist Healthcare System, a for-profit organization with five ambulatory surgical centers. Each surgery center focuses on a specific beneficiary population and/or surgical specialty. The Chief Executive Officer (CEO) for the five surgical centers is Mrs. Elaine Morris. The team toured the North Central Ambulatory Surgical Center, which performs gastro-intestinal,

OB/GYN, and general surgical procedures (Ms. E. Morris, personal communication, October 1, 2004). For-profit medical groups and local providers use the facility. Graduate Management Education does not occur within this center so some of the efficiency parameters required such as minutes per case, may not be realistic for BAMC to achieve.

The MASS is a two year old state-of-the art facility designed using recommendations from the CEO (E. Morris) and local physicians. The intent behind the design was to create a patient friendly atmosphere while focusing on the type of surgeries performed to allow for multiple surgeries per day of the same type (Ms. E. Morris, personal communication, October 1, 2004). As a result, each of the MASS' five centers has a different facility design. The majority of administrative paper work is handled prior to patients arriving for their surgery. At least three days in advance, the patient's history is taken in a 20-minute phone conversation (Ms. S. Murley, personal communication, October 1, 2004). Additionally, the business office for the Methodist Healthcare System conducts preauthorization checks prior to patients arriving for their surgery. This ensures that the insurance company or health maintenance organization will reimburse the Center for the care provided. Each of these administrative processes ensures the organization is paid and allows the staff of the surgical center to focus purely on the patient's surgery, resulting in an increase throughput of patients.

The reception area is pleasant and provides three areas for patients to sign insurance documents and consent paperwork. From there, the patients are taken to a changing area and asked to change. There are no personal lockers so patients place their belongings under their gurneys. Patients are taken to the pre-op area where they

receive anesthesia and are prepared for surgery. There are up to six nursing personnel who have staggered shifts, based on daily workload. Once the surgeon is ready, the patient is taken to one of five operating rooms. Each operating room is 400 square feet (Sq Ft) and the staff within the operating room consists of a registered nurse and an operating technician. The facility does not have an in-house anesthesiologist, so each physician has his/her own anesthesiologist. The facility has additional staff members including an instrument technician, supply technician, and anesthesia technician, to facilitate the operation of all five operating rooms. This also allows the organization to address the physicians' individual needs. This for-profit organization recognizes that patients and physicians are their customers (Ms. E. Morris, personal communication, October 1, 2004). The facility averages 800 ambulatory surgeries per month, but may perform as many as 900 in any given month (Ms. S. Murley, personal communication, October 1, 2004). Physicians drive the workload and utilization of the center since this facility is a for-profit organization. Once the surgery is completed, the patient is taken to Phase I recovery. Turnaround time for cleaning and preparing an operating room averages five to six minutes, which is far below the benchmark of 15 minutes (Ms. S. Murley, personal communication, October 1, 2004). Every staff member gets involved with room preparation. In fact, the facility does not utilize housekeeping to turnover the rooms as BAMC and WHMC currently do. Once a patient is awake, he/she is brought to Phase II recovery, which has 10 recovery beds (or chairs). The nursing staff cares for patients in both Phase I and II.

Many efficiencies and procedures are employed within MAAS. Phase II recovery is used for patients who can be fast-tracked or may pass-by Phase I recovery; this

increases the throughput of patients through the surgical system. Turn-around time is 10 minutes below the benchmark of most facilities, enabling more surgical cases to be booked. Lastly, staff members are scheduled daily on staggered shifts, as opposed to one set shift as in the case of the MHS. This enables the organization to ensure it has the appropriate number and mix of staff, while also being more cost-efficient.

Medicare Reimbursement of Ambulatory Surgical Procedures

The enactment of the Tax Equity and Fiscal Responsibility Act (TEFRA) in 1982 and the implementation of prospective payment for inpatient care using diagnosis related groups (DRGs), lead to the growth of ambulatory surgical clinics within the U.S. The U.S. government began to reimburse under Medicare for facility fees for specific procedures performed within an ambulatory surgical center (Paryani et. al, 1985). As a result, reimbursement is typically higher for the same surgeries performed in an outpatient setting as opposed to those performed in an ambulatory setting. The Centers for Medicare and Medicaid (CMS) established different payment rates based on the setting in which the surgery is performed. For example, the facility rate for a cataract removal performed in an ambulatory surgical center is $973.00 compared to $1,254.00 in a hospital unit (Medpac, 2004).

Medicare reimbursement rates for surgeries performed in an ambulatory surgical center were established in 1990. This rate is based on a fee schedule that bundles facility services such as nursing, recovery, anesthetics, and supplies. Based on the surgery a patient has received, that surgery falls within a payment group. Therefore, the organization is reimbursed according to the payment group in which that surgery falls. Thus, ambulatory surgery centers typically do not monitor supplies down to the patient

level since reimbursement is based purely on the surgery performed (Ms. E. Morris, personal communication, October 1, 2004).

Currently, there are nine payment groups (see Appendix D). As of 1 April 2004, the payment groups ranged from $333.00 to $1,339.00, which is based on the median cost of the services within each group (Medpac, 2004). These rates are more than 15 years old and are based on a 1986 survey of ambulatory surgical centers expenses and charges (Romansky & Zimmerman, 2004; Medpac, 2004). One fault of the current payment rate is that each of the nine groups contain over 100 services, some of which are clinically unrelated. Some of the services reimbursed either are under or over paid, depending on the variation between the rate assigned to that group and the actual cost of performing that service (Medpac, 2004).

A report by the Department of Health and Human Services Office found that overall, ambulatory surgical centers are more cost-effective than hospitals for the same surgical procedures. However, the report stated that Medicare currently could save up to $100 million if ambulatory surgical reimbursement rates that are higher than those performed in hospitals were reduced and vice versa (Medpac, 2004). Because of similar issues, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 eliminated the payment update for 1 year for ambulatory surgery from 2005 through 2009 (Medpac, 2004). This could potentially have an impact on reimbursement rates for ambulatory surgery for hospitals and surgical centers in the future.

In order for facilities, freestanding or hospital owned, to receive reimbursement from Medicare, they must meet specific requirements that include administration of anesthesia, quality evaluation, operating and recovery rooms, staffing, nursing services,

and other areas (Medpac, 2004) (see Appendix E). Ambulatory surgical centers that meet these requirements must be licensed by a state agency or accredited by an approved accreditation body (Medpac). In 1982, Medicare reimbursed approximately 100 types of ambulatory surgeries and increased this number to 2,200 surgeries by 1998 (Sultz & Young, 1999). Today, Medicare covers over 2,400 surgical cases (Bedsole, 1997). On that account, the number of Medicare-certified ambulatory surgical centers grew from 400 in 1983 to just over 3,300 surgical centers today (FASA, 2004). Many believe this market is still in the growth stage since the Medicare benefit is only 20 years old.

Regulatory Requirements

In 1974, ambulatory surgical facilities were not eligible for survey by the Joint Commission for Accreditation of Healthcare organizations (JCAHO). Therefore, the Federated Ambulatory Surgery Association (FASA) established internal standards for its members (Bedsole, 1997). Today, ambulatory surgical centers are highly regulated either by the federal government, the state, peer reviews, or by JCAHO (FASA, 2004). Facilities that want to receive reimbursement from Medicare undergo routine inspections and must meet a specific criteria and approval known as certification (FASA; American Association for Accreditation of Ambulatory Surgery Facilities, 2004). The parameters for this inspection are found in Federal Register, 42 CFR 416 and are typically performed by the individual State Department of Health or an accrediting body (AAASC). The parameters are stringent and they address the physical environment, credentials required by the physicians and staff, and the minimum type of emergency equipment required. Additionally, 43 states also require state licenses; Texas is one of

those states (FASA). Some surgical centers elect to go through a voluntary accreditation process by their peers or by an accrediting body such as JCAHO or the AAASC. Federal facilities such as BAMC are not licensed by the state. However, in accordance with DoD requirements, if BAMC pursues an ambulatory surgery unit that is co-located with BAMC, the organization would need to contact JCAHO about this new unit. JACHO would determine whether an extension survey was required or whether it would survey the unit during BAMCs' next triennial survey in FY 2006. If JCAHO decides to conduct an extension survey, BAMC or MEDCOM would be required to pay a fee. In both cases, the unit would be surveyed under hospital accreditation standards and in the future it would be surveyed along with BAMC. If BAMC elects to build an ambulatory surgical center that is not co-located with BAMC and is considered by both BAMC and MEDCOM to be a separate entity, then the Center would undergo JCAHO accreditation as an ambulatory surgery center (ASC). Currently, the organization does not have the JCAHO standards for an ASC and would have to purchase the standards from JCAHO (Ms. A. Halliday, personal communication, November, 7, 2004).

Certificate of Need (CON) is also required by some states (AAASC, 2004). This is a state regulatory program intended to monitor costs, access, and quality. Primarily, it revolves around ensuring that only needed services and facilities are developed within communities (AAASC). Since BAMC is a federal facility and does not fall under state requirements, a CON is not required (Mr. R. Hirchak, personal communication, November 8, 2004). However, if BAMC recommends that an ambulatory surgical center is appropriate, MEDCOM will ultimately make that decision. Organizations such as the

Health Facility Planning Agency will assist by identifying the appropriate design and funding streams (Mr. R. Hirchak, personal communication, November 8, 2004).

Layout, Patient Flow, Turnaround Time, and Staffing

The most important element in designing an ambulatory surgery center is the design phase. This consist of programming the appropriate number of operating rooms and space requirements while considering patient and staff flow of the entire facility. The end state is to design a facility that provides flexibility yet meets the specific goals of the organization and accommodates changing technology and equipment (Stengel & Allo, 1997). An inadequate design for patient flow will inevitably lead to inefficiency and may undermine the success of a project. Organizations that anticipate workload and technological requirements 5-10 years out avoid unnecessary construction costs in the future (Stengel & Allo). A project should anticipate the space required in order to accommodate changes in the delivery of health care and technology. However, Giglio (1997) writes that conducting an analysis is very difficult because of the multiplicity of factors involved.

An organization must identify the scope of the project, future growth, equipment requirements, space, technology, costs, and staffing availability. Although some of the variables mentioned above are addressed under workload projections, they are also related to the scope of the project. Specifically, the scope addresses whether ambulatory and/or inpatient surgery will be performed within the operating room being designed. Stengel and Allo (1997) recommend that separate inpatient and outpatient operating rooms should be collocated to allow for maximum use of resources, future

flexibility, and minimum duplication. For this study, the researcher only focused on ambulatory surgery.

An organization must also identify the caseload in order to determine the size, number, and configuration of the operating room suite (Stengel & Allo, 1997). An organization must forecast future workload and the most efficient work flow since it inevitably drives the design. Over or under estimating the number of operating rooms or space requirements may lead to inefficiency and future construction costs. When an organization identifies the future or forecasted demand, a target year for analysis purposes must also be identified (Giglio, 1977); a target year is typically two to four years from the current year. Planning a facility based on the upcoming year's forecasted workload is shortsighted since the operation is fairly new. Conversely, utilizing projected workload and staffing more than five years out involves too many uncertainties (Giglio, 1977). Specifically, Stengel and Allo (1997) recommend identifying the projected workload by procedure type and type of patient, calculating the anticipated population, and identifying future changes or growth in the scope of services to be provided. According to the DoD, if a medical facility is authorized a surgical suite, there will be a minimum of two operating rooms regardless of the workload projected (DoD Space Planning Criteria, 2004). Furthermore, the number of operating rooms programmed for an MTF will be based on a 75% utilization rate during normal duty days (DoD).

Planning the required number of operating rooms is dependent on workload however, the criteria for the reception and preoperative holding areas, the size of the operating room, the PACU, and other areas such as standards for zoning (ie., an area that is established for a specific purpose), are universal and mandated by state or

federal requirements (Stengel & Allo, 1997). For example, there are three zoning areas for a surgical suite: 1) an unrestricted area, where staff and visitors may freely access, 2) a semirestricted area (i.e, where scrubs are worn), and 3) a restricted area where a sterile environment must be maintained. An important aspect in determining overall space requirements is "how long does it take for a patient to move through the system" (Stengel & Allo, p. 2). This data assists in determine the amount of space necessary for the waiting room, pre-op, and the recovery rooms.

The layout must be user friendly for the patient and staff. The first area is the patient intake area or reception area, which is used to receive patients and conduct administrative paperwork. This area should be pleasant and provide enough space for family members to wait for the patients to have their surgery. The size of this area is dependent on the number of cases per day (Stengel & Allo 1997). The preoperative holding space holds patients until operating rooms are available and where they are unclothed and IV sedation begins. From there, patients move to the operating room. The typical size of an operating room is 400 sq ft (Stengel & Allo), however, DoD Space Planning Criteria states that the size of an operating room is dependent on the level of care provided. According to the American College of Surgeons there are three levels of care: 1) Class A, where minor surgical procedures are performed under topical, local, or regional anesthesia, 2) Class B, where minor surgical procedures are performed under intravenous sedation, and 3) Class C, which provides for major surgical procedures that require either general or regional block anesthesia (DoD Space Planning Criteria, 2004). If special equipment is required for the operating room, additional space may be necessary. After surgery, patients enter the PACU. Typically, patients are brought to

Phase I, however, some patients may be fast tracked to Phase II depending on their level of sedition (CDR J. Denham, personal communication, September 27, 2004). Phase I PACU recovery is associated with general anesthesia and Phase II is associated with surgery which does not involve general, spinal, or epidural anesthesia (DoD Space Planning Criteria, 2004). On average, 80 square feet per patient bed and 4 feet between the foot of each bed is recommended (Stengel and Allo). If after one hour, those patients not fast tracked to Phase II, are brought to Phase II recovery. This is the final step before patients are released. Ultimately, patient flow and accessibility are the most important factors to keep in mind (Cahn, 1995).

Turnaround time is an area that should be analyzed frequently to detect delays in the surgery process. As defined by Stengel and Allo (1997), turnaround time is "the amount of time it takes to prepare an operating room after a surgical procedure has terminated and the next patient enters the same room" (p. 47). Ms. Elaine Morris of the Methodist Health System states that on average, their turnaround time is five to six minutes compared to BAMC, which currently hovers around 27 minutes (personal communication, September 29, 2004). In order to decrease turnaround time, the literature and Ms. Morris recommend the whole team concept. The team concept includes the nursing staff, scrub technicians, a circulating nurse, and a central processing technician. The standard, "it's not my job" does not have a place in the operating room when trying to turn a room around.

Operating rooms must be staffed accurately to ensure safe outcomes and good throughput. Ultimately, staffing decisions to increase the number and mix of personnel are based on workload (Malangoni, 1997). In regards to staffing each operating room,

BAMC, like Methodist, has three personnel that comprise an operating room team: one operating room nurse, one surgical technician, and one certified registered nurse anesthetist or M.D. anesthesiologist (LTC L. Leandry, personnel communication, 13 September 2004).

In order to determine staffing requirements for the preoperative and PACU areas, BAMC staffing is based on historical workload and beneficiary population using the Automated Staffing Assessment Model (ASAM), MEDCOMS official staffing model (Mr. J. Reiser, personnel communication, September 15, 2004). North Central Methodist Ambulatory Surgical Center staffs the preoperative and PACU based on workload however, management staggers its personnel by shifts. During peak hours, all staff members are working whereas at the end of the day, the number of staff members on hand is reduced (Ms. S. Murley, personnel communication, September 29, 2004). Methodist realized the central point to staffing is to determine the pattern of patient volume. So management conducted a staffing study to determine the times at which staffing should be at its heaviest and staggered its shifts accordingly (Cahn, 1995).

Proposed Growth and Future of Ambulatory Surgery

As the health care delivery system continues to evolve, the environment in which care is provided also changes (Cahn, 1995). According to the American Hospital Association (AHA), between 1979 and 1995 there has been a 425% increase in the number of hospital-based ambulatory surgeries (Coile, 2000). By 1990, the percent of ambulatory surgeries surpassed inpatient surgeries and this trend continues (Coile, 2000). The growth of ASCs is also increasing. In fact, ASCs have grown at an annual rate of 5% or 150 new surgery centers per year (Trinity Health, 2003). In a study

conducted by the VHA's Center for Research and Innovation (2003) the market for ambulatory surgery is projected to increase from 6% to 21% between 2002 to 2007. What is causing this growth and what can we expect to see in the future?

The growth of ambulatory surgery is driven by five forces: 1) technology, 2) consumers, 3) payment, 4) physicians, and 5) regulation (VHA, 2003). Technological advancement makes it more practicable to perform a growing range of ambulatory surgeries (AAASC, 2004). The development of fiber-optic technology, image digitization, and minature devices has guided surgery to outpatient (Institute for the Future, 2000). Technology enables surgeries to require less invasive techniques and use faster acting, and more effective anesthetics (AAASC). Procedures that once required an overnight stay, major incision, and/or deep sedation are now performed with fewer, if any incisions, conscious sedation, and involve minimal recovery time. As medical innovation increases, one can expect that the number of inpatient surgeries currently performed will become ambulatory surgeries. Another force behind an increase in ambulatory surgery is consumerism. According to patient satisfaction surveys, patients consistently prefer outpatient surgery. Typically, surgical centers are more conveniently located and provide more accessible parking, since the facilities are much smaller. One survey found that patients prefer a more patient focused environment that works towards decreasing waiting times, which is a benefit of most surgical centers (AAASC). A third reason for the continued growth of ambulatory surgeries is payment, especially when comparing an ASC to the hospital-based ambulatory surgery model. Patients who have surgery in a surgical center may save as much as 61% (over $300.00) compared to the out-of-pocket coinsurance the patient would pay for the same procedure at a hospital

(AAASC). For payers, surgery centers are more affordable. Medicare saves about half a billion dollars by utilizing centers for ambulatory surgery compared to performing ambulatory surgery in a hospital (AAASC). Employers and insurers are two of the main forces behind increasing the use of ambulatory surgery and more importantly, the use of ambulatory surgical centers. The Medicare benefit and the loosening or elimination of CON laws are another reason for the continued growth of ambulatory surgical centers (AAASC). As CMS expands the number of procedures approved for ambulatory surgery, it becomes more feasible and cost-effective to operate surgical centers. The last reason for growth is the physicians themselves. Historically, physicians have caused the growth of ambulatory surgery as well as the use of surgical centers. Physicians find ambulatory surgery to be more cost-effective and surgical centers allow them to tailor surgical suites and their operating style more conveniently compared to a hospital-based surgical center. Today, physicians have an ownership interest in 83% of surgical centers, whereas hospitals have part ownership in 44% and full ownership in 15% (AAASC).

Based on the growth of ambulatory surgery and surgical centers through the years, what can one anticipate for the next millennium? According to Coile (2000), ambulatory care is becoming the core business of U.S. hospitals. A sample of 3,400 U.S. hospitals showed that ambulatory care accounts for 34.5% of revenues (Coile). Although the study does not specifically address ambulatory surgery, research shows that 60% of most hospital's surgery is ambulatory (Ophthalmology Times, 2003). Economists expect this trend to continue, however, based on the outpatient surgery performed, hospitals may lose money under Medicare reimbursement. According to a

study of 56 ambulatory surgical procedures that accounted for 80% of dollars spent on ambulatory surgery, the average hospital stands to lose $268.00 per patient under Medicare's present payment schedule (Coile). Although growth is anticipated, this service must become more cost-competitive and clinically integrated into the future (Coile). Furthermore, although growth and expansion is expected, futurists anticipate the growth of surgical centers will slow down, but the number of cases performed will increase (Coile). The ability to develop a surgical center within a larger facility that provides ancillary and other outpatient services provides increased economies of scale in staffing, supply costs, and group purchasing compared to a freestanding facility (Zasa, 2001). Coile (1998) refers to these as ambulatory surgical mega facilities and states that this type of regional center will be able to handle more sophisticated surgical procedures. The volume of surgeries is increasing by 15% each year; however, the rapid expansion seen in the 80s is slowing (Coile, 2000). During the 1980s, 150 - 180 new centers were built. By 1996, that number shrank to an average of 95 new centers built annually (Coile, 2000). Conversely, volume and the type of surgical cases performed in an ambulatory environment are expected to grow in the future. More complex cases are expected to be performed in an outpatient environment, which may create a demand for an overnight stay. Although this goes against the concept of ambulatory surgery as originally defined, some surgical centers are beginning to perform more complex cases, requiring accommodations for post-surgical recovery. Wilford Hall is currently adding overnight recovery to its same-day surgical unit. Although some of the more complex same-day surgery patients require greater than 23-hour recovery, they do not require inpatient beds.

Another trend that will continue is consumerism. In general, Americans do not like to wait and they want to be the focus of care. Hospitals realizing this have created surgical centers that have "roomettes" which are rooms exclusively assigned to patients when they check in and stay in until they are discharged (Coile, 2000). Satellite surgical centers are also becoming common and are expected to continue (Coile). As hospitals seek to increase their market share and appease their patients, facilities that are still building freestanding surgical centers are building them at various locations. Methodist has adopted this strategy and has a total of five facilities located throughout the San Antonio area. Additionally, specialty nitch surgical centers are becoming a trend (Zasa, 2001); these centers cater to specific customers and are a popular strategy for the future (Coile). Johnson, Holm, and Godshall (2000) found that surgical centers that focus on specific procedures increase efficiency through familiarity with the surgery, thereby reducing costs by as much as 35%. Based on the historical development of ambulatory surgery and concern for the future, hospitals must begin to develop a strategic plan that identifies the most cost-efficient method of providing ambulatory surgery. The growth of ambulatory surgery is a critical factor in keeping our facilities operational. Couple this with the fact that patients prefer outpatient surgery, the results should compel hospital commanders to focus their attention on this matter. BAMC recognizes this trend and intends to position itself accordingly. The question becomes, how should BAMC provide its ambulatory surgery?

Purpose

The purpose of this study is to determine what method BAMC should pursue to meet the future ambulatory surgical needs of its beneficiary population. Central to this

analysis was identifying trends within the MHS and determining the future needs for ambulatory surgery for the population served. Population projections and historical workload data from 2002 to 2004 served as the basis to project future requirements. The population refers to those members or beneficiaries that are authorized primary and specialty care within BAMC specifically (Ms. D. Rusing, personal communication, November 8, 2004). Additionally, the decision as to which course of action to recommend to the BAMC Commander is based on the following weighted variables; ability to expand, displacement effect, financial ROI, ability to meet GME, layout, location, most surgeries performed, and time to implement.

Supporting objectives for this project were: 1) forecast FY 2005 - 2008 ambulatory surgery demand using historical workload from FY 2002 - FY 2004, 2) develop a productivity model to retrospectively analyze the FY 2004 ambulatory surgery's workload to identify if staffing levels can handle additional surgical procedures, 3) determine the appropriate number of operating rooms required to meet forecasted demand, 4) determine staff, supply, equipment, and construction costs for each course of action based on the workload forecasted, 5) determine the potential impact of each course of action, which may impact the final decision as determined by the PAT, and 6) determine and recommend the ambulatory surgery model most conducive to BAMC's future operating environment.

Methods and Procedures

In order to determine the best course of action for BAMC, a seven step analysis was utilized. The first step was to identify the assumptions and historical or preliminary data. The second step was to determine the ambulatory surgery demand forecast using

historical workload data. The third step was to develop a simple productivity model based on FY 2004 workload and the number of hours physicians performed same-day surgery. Step four was to identify the number of operating rooms, staffing, and the space required based on the forecasted demand in step two. Step five included diagramming each course of action, if applicable, and its basic layout. The sixth step was to conduct a financial assessment using MEDCOM's Business Case Analysis template. Finally, a Decision Matrix for each course of action and weighted variables that affect the final recommendation was developed.

The first step was to develop the assumptions made by the leadership about the study and to gather the historical workload data. Assumptions assist in developing various courses of action, provide a focus for the project, and are related to forecasting future workload, constructing the productivity model, identifying staffing requirements, and designing the layout. One must be cautious when making and using assumptions. Although their use allowed this researcher to focus on the key variables of the project, a PAT was established and several meetings were held to identify some of the key issues. The next phase of this step was to gather historical data from FY 2002 - FY 2004: 1) total number of ambulatory surgical cases performed within BAMC, 2) backlog of ambulatory surgical cases, 3) turnover time by surgical service, 4) the total ambulatory surgical cases performed in the network, 5) Provider's time, and 6) costs associated with ambulatory surgery (see Appendix F). Data was extracted from numerous automated information systems including the Management Analysis and Reporting Tool (M2), the Composite Health Care System (CHCS), OPLOG, Medical

Expense Performance Reporting System (MEPRS), and DHMRIS. The last two systems will be discussed in step three.

M2 is used to obtain summary and detail views of population, clinical, and financial data. The system provides data for MTFs and commercial network claims that are integrated with eligibility and enrollment data. This integrated data enhances support to health care managers across the MHS. M2 allows users to perform trend analysis, conduct patient and provider profiling studies, and conduct business case analysis to maximize health plan efficiency (Ms. M. Bacon, personal communication, October 15, 2004). CHCS is a standardized comprehensive medical information system composed of various modules. One component, CHCS Workload Assignment Module, provides data by MEPRS code as a system of accounting for workload in an MTF and enables the DoD to conduct an economic analysis (SAIC, 1998). OPLOG was developed in 1999 by LTC David Hayes and allows surgeons to track surgical patients and past cases performed. By 2001, this homegrown Microsoft Access ® based program was expanded as multiple services began to use the system. In its current form, the program is capable of tracking real-time patient care from the date a patient's surgery is scheduled by the surgeon until the surgery is completed. A secondary purpose of this system is to capture statistics such as workload data by physician, operating room, and CPT code, operating room turnover time, and other relevant data utilized by the analysts within the facility (Dr. D. Hayes, personal communication, October 12, 2004). Although the MEDCOM recommends the use of Surgical Scheduling System (S3), the leadership within the facility has adopted OPLOG. One of the areas of concern noted by the researcher was the process by which information is placed into

OPLOG. Staff (either residents or a dedicated scheduler) from each of the surgery clinics is responsible for inputting the surgical cases being performed in the main operating room and their respective CPT code. This decentralized system results in each clinic manager determining when the surgical case is input into OPLOG. This researcher personally contacted each surgery clinic to learn its process since this influences the number of ambulatory surgery cases on backlog. For example, the Orthopedic and EENT clinics routinely schedule every surgical case that must be performed in the main operating room as soon as the need is determined (Ms. S. Pearce, personal communication, September 30, 2004). However, some of the clinics do not input their ambulatory surgery information until a week before the date of that surgery. As a result, the researcher was not able to rely solely on OPLOG for the number of ambulatory surgery cases on backlog. Instead this researcher had to receive the backlog data, or the number of ambulatory surgery cases that could not be scheduled within the next 30 days, from three of the eleven clinics in order to identify this data point.

Reliability, as defined by Cooper and Schindler (2003), is the accuracy and precision of a measurement procedure and its consistency. The data from CHCS, M2, MEPRS, and DHMRS are considered to be reliable because the information systems have been adopted by the DoD and data is verified on a monthly basis. Additionally, BAMC performs monthly data quality checks on the accuracy and timeliness of Ambulatory Procedure Visits (APV) coding within CHCS as part of the Data Quality Assurance Team and has been since FY 2002 (Ms. D. Rusing, personal communication, October 18, 2004). Accuracy pertains to how valid the data is within

CHCS and it involves coders who conduct periodic audits of the medical record to compare the information within CHCS. Timeliness refers to whether the APV was coded within the established time line by MEDCOM.

Within the DoD and the AMEDD, data quality has received a great deal of emphasis since a 1999 General Accounting Office Report (GAO) found that DoD managers did not have sufficiently accurate or timely data. Due to this emphasis, MEDCOM implemented its data quality management control program (DQMC) in January 2001 (Deak, 2002). MEDCOM holds monthly data quality meetings and each facility within MEDCOM is required to submit monthly data quality reports (LTC L. Bennett, personal communication, October 15, 2004). The Chief of Clinical Support Division submits BAMC's monthly report after receiving BG Fox's approval (MAJ C. Schreckhise, personal communication, October 6, 2004). As part of data quality assurance, data systems are verified for timeliness, accuracy, and completeness. MEDCOM compares each facility's data. If an organization's data is out of range from other facilities within MEDCOM, the organization must focus its efforts in this area and routinely report to MEDCOM on its status (MAJ C. Schreckhise, personal communication, October 13, 2004). For BAMC, APV accuracy has increased from 80% in December 2004 to 96% by August 2004 (Data Quality Assurance Minutes, 2004).

The second step was to determine the forecasted ambulatory surgery demand using historical workload. The knowledge of future demand is extremely helpful when planning output and investments for in the future (Maurice & Thomas, 1999). However, calculating a future demand is difficult since it involves estimating what will occur in future years. Forecasting, which is a prediction of the size of a future quantity, is a

quantitative tool used to minimize error and determine future workload. Quantitative models, unlike qualitative models, employ explicit methods that other analysts can replicate using the same data (Maurice & Thomas). The estimate will be used to determine the required number of operating rooms, staffing, and space requirements. Therefore, data reliability is crucial.

Many methods exist to forecast future workload. Therefore, it is imperative that the researcher identify key issues prior to selecting one method. Many military facilities postpone elective surgeries during the fourth quarter of the FY as budget shortfalls prevail. Therefore, a model that allows for trending or seasonality is important. Another factor is determining whether to use a naïve or casual model. Naïve models are exclusively based on historical workload; casual models show a relationship between predictors and outcomes (LTC C. Pate, personal communication, August 15, 2003).

Based on the historical data and the considerations above, a Time Series model and Seasonal Regression models were selected. By utilizing two models, the researcher hoped to identify the least amount of error and the most accurate demand for the future. The Time Series is a simple regression model with a single independent variable (Decision Forecasting, 2004). Simply stated, a Time Series model is a straight line fitted to a scatter plot calculated using simple regression analysis (Maurice & Thomas, 1999). Using this type of model, one posits that historical workload will increase or decrease linearly over time (Maurice & Thomas). Assuming that workload in the future continues to grow or decrease at the same rate, workload can be forecasted by extending the regression line for each surgical specialty (Maurice & Thomas).

For this analysis using historical workload data FY 02 – FY 04, the equation is as follows:

$$Y_t = a + Bt$$

In this case, Y(prime) is the projected value of the Y variable for a selected value of *t*; a is the Y-intercept which is the estimated value of Y when t = 0; b is the slope of the line which is the average change in Y (prime) for every change of one unit in *t*; and *t* is the value of time that is selected (LTC C. Pate, personal communication, August 15, 2003).

The Seasonal Regression model is also a time series model that is applicable when forecasting future demand that has a seasonal component. McClave, Benson, & Sincich (1998) define seasonal as the "fluctuations in the time series that recur during specific time periods" (p. 754). The first model adjusts for estimated trends but does not adjust for seasonal fluctuations, and may present a bias (LTC C. Pate, personal communication, August 15, 2003). In order to adjust for seasonal effects dummy variables are used (McClave, Benson, & Sincich). By using a dummy variable, the researcher is able to assign zero or one depending on the absence of some condition (Maurice & Thomas, 1999). In this case, a dummy variable of one is assigned if the workload is from the first month and a zero is assigned for all other months. Similarly, if the workload is from the second month, one is assigned and all other months are assigned a zero. There will be a total of 11 dummy variables used. For this analysis using historical workload data FY 02 to FY 04, the equation is as follows:

$$Y_t = B_o + B_1t + B_2M_1 + B_3M_2 + B_4M_3 + B_5M_4 + B_6M_5 + B_7M_6 + B_8M_7 + B_9M_8 + B_{10}M_9 + B_{11}M_{10} + B_{12}M_{11}$$

In this case, t = time period which ranges from t = 1 for the first month of year one and t = 2 for the second month of year one all the way to t = 36. By converting time periods or months into integers (one through 36), a continuous variable is obtained (Maurice & Thomas). M_1 = 1 if month one and zero if month two and so on. M_2 = 1 if month two and zero if month one or three through twelve. This continues through M_{11} = 1 if month eleven and zero is month one through ten. After running the seasonal regression model, one can forecast the future by using the following formula:

$$\hat{Y} = B_0 + B_1(37) + B_2$$

In this case, B0 is the y-intercept and B1 is the slope. The integer 37 denotes FY05 month one (October 2005). The researcher will forecast by month FY05 to FY08.

The objective of forecasting using quantitative models is to minimize the forecasting error. Forecasting error as defined by McClave, Benson, & Sincich (1998), is the difference between forecasted values and the actual values. The model utilized to forecast the future workload is determined by comparing the forecasting error for each of the models. Just as there are numerous models, there are also numerous methods to forecast accuracy. For this analysis, the mean absolute percentage error (MAPE) is used. The MAPE is the average value of the absolute values of errors expressed in percentage terms (National Center for Education Statistics, 2003). The formula is as follows:

$$MAPE = E\,(PE_i)/n$$

MAPE is calculated by computing the absolute error for each time period, dividing the absolute error by the corresponding actual value, and multiplying by 100. Unlike other methods, the MAPE is a percentage and is often preferred (LTC C. Pate, personal

communication, August 13, 2003). In order to calculate the forecasted error it is imperative that one or more actual values are available to compare to the forecasted value (McClave, Benson, & Sincich). Therefore, the formula using FY 2003 workload as data being forecasted and FY 2004 as the actual workload was used. If the MAPE value of the Time Series Forecasting Model had been smaller than the MAPE of the Seasonal Regression Model, then the Time Series Forecasting Model would have been preferred. Conversely, if the MAPE had been larger, the Seasonal Regression Model would have been used.

The third step was to prepare a productivity model that retrospectively analyzes FY 04 productivity. This model illustrated whether the surgical services performing ambulatory surgery had the capacity to handle additional workload from the network or new workload. The data were based on the FY 2004 MEPRS. The MEPRS system is MEDCOM's standardized reporting mechanism used to report financial costs, workload, and personnel data. The financial data relates to both direct and indirect costs. Direct costs, as defined by Finkler and Ward (1999), are costs associated with a single cost objective and are generally under the control of the manager. Examples of direct costs are supplies, equipment, and personnel. Conversely, indirect costs are costs that are not directly associated with the cost objective (e.g., housekeeping, utilities, and laundry services) (Finkler & Ward). These costs are compared to their associated workload or, in this case, APVs to determine efficiency (LTC T. Mindingall, personal communication, October 20, 2004). An APV shows how ambulatory surgical workload for both major surgery (i.e. tubal ligation) and minor surgery (i.e. vasectomy), are recorded (LTC T. Mindingall, personal communication, October 20, 2004). Personnel data that are

reported by FTEs are retrieved from DHMRS and feed the MEPRS system. Most facilities within the MEDCOM are using the Uniform Chart of Personnel System (UCAPERS). In 2001, BAMC became the beta test site for DHMRS (LTC T. Mindingall, personal communication, October 20, 2004). DHMRS captures personnel hours and categorizes where and how employees spend their time. For example, clinicians report what portion of their day they work in the outpatient clinic, the operating room, or performing administrative duties. Reporting clinician's time is an important tool for evaluating efficiency within an organization. One area of concern is how accurate clinicians are reporting their time.

The productivity model enabled the identification of the total number of clinician FTEs performing surgery and outpatient visits and a comparison against a national benchmark. Due to the shear number of ambulatory surgical cases, this researcher selected the high volume services (ophthalmology, general surgery, otolaryngology, gynecology, and orthopedics) for this analysis. Hours, like workload and costs, are reported by a MEPRS code and the MEPRS code pertains to a specific surgical service. Consequently, FTE hours are reported for APVs and outpatient clinic visits. This provides each of the respective services the outpatient, ambulatory, and total hours available to provide care for the month. By totaling the hours available by service and dividing this number by 165.25 hours the result is the total number of FTEs available. The 165.25 hours was based on the planning factor of 20.906 days per month at eight hours per day (Department of the Army, AR 570-4, 2000). Simply put, this calculation prescribes the average number of hours per month that military and civilian personnel in the Table of Distribution and Allowance organizations are available for work. This

number is then divided by 12 months and results in the available FTEs per month for outpatient and ambulatory visits out of the total FTEs.

The second portion of the productivity model addresses the total number of visits for the same year, FY 2004. The total number of visits is from MEPRS. The high volume services selected for the FTEs are the same utilized for this part of the study. The total number of outpatient and ambulatory visits are divided by the total number of FTEs available for outpatient and APVs as determined in step one. The result is the total number of visits (outpatient and APVs) a clinician has seen in FY 2004. This figure was compared to Medical Group Management Association (MGMA) benchmarks for each of the services (Deak, 2002) (see Appendix G). For this study, the 90th percentile of each service within an academic setting was used. If a service was less productive compared to the MGMA benchmark for that service, then the service could be inefficient. Conversely, if a service was more productive compared to the MGMA benchmark for that service, the service could be efficient. However, services that were more productive may still be able to gain greater efficiencies, which was a condition that has been considered.

Validity is the "extent to which a test measures what we actually wish to measure" (Cooper & Schindler, 2003, p. 231). The Managed Care Division, Tripler Army Medical Center (Deak, 2002), designed the productivity model in step two. The model used data from OPLOG, MEPRS, and DHMRIS, which was reliable since monthly data quality checks for accuracy and timeliness occur.

The fourth step was to determine the appropriate number of operating rooms and staff required to meet future demand. The forecasted data from step two was essential

to identify this requirement. The Health Facility Planning Agency published the DoD Space Planning Criteria to set forth the space planning criteria for surgical services. The appropriate number of operating rooms was dependent on the number of surgical procedures programmed per day and the average time per surgical procedure. Planning factors for operating rooms were further delineated by general and special operating rooms. The formula to determine the required number of operating rooms was (DoD Health Facility Planning Criteria, 2004):

$$\text{ORs Required} = \frac{(\text{Daily No. of Cases}) \times (\text{Average Time in Minutes per Case})}{360 \text{ minutes per day}}$$

Similar to identifying space requirements, staffing a surgical unit is based on the forecasted workload. MEDCOM utilizes ASAM that was developed by the Manpower Division to determine the minimum essential staffing requirements for MTFs. This model provides each commander with a tool to project staffing and is based on forecasted population and historical workload data (Mr. J. Reiser, personal communication, September 15, 2004). According to Reiser, the model was developed in conjunction with clinical and non-clinical consultants and involved reviewing past staffing studies and private sector benchmarks (Personal communication, September 15, 2004). Although this model addresses the staffing needs for every clinic within the facility, this researcher only utilized the work sheet called Anesthesia-OR-Services-PACU-Ambulatory Procedure Unit Work Center. The ASAM template required information pertaining to BAMC's beneficiary population, workload, and minutes of service provided.

BAMC's current and forecasted populations were the first two fields (A & B) required. This information was retrieved from the Managed Care Forecasting and Analysis System (McFAS), which forecasted the number and location of beneficiaries

eligible for medical care. The next three rows (C - G) related to the number of operating rooms in the facility and the optimum surgical caseload. The latter question involved the members of the PAT since optimizing ambulatory surgical cases included processes as well as decreasing operating room and turnover times. There was no documented criteria within MEDCOM that defines optimum surgical caseload. Therefore, this researcher relied on the experience of the PAT. The information above lead to what the facility anticipated as their ambulatory surgical cases for the month (row H). This estimate was compared to the surgical cases forecasted in step two. Although the ASAM model is an approved method, one area of concern was identifying the optimum surgical caseload in row F. Since this involved process changes that could not be identified until the center is fully operational, it is difficult to speculate as to this number. Additionally, ASAM is a human resource tool to identify the proper numbers of staff, not the number of operating rooms. The formula from the DoD Health Facility Planning Agency was the appropriate tool. The next two rows (I – J) related to the average number of surgical cases referred to the network. This information was retrieved in step one using M2. Rows K – Q pertain to the percent of surgical cases started on time and the anesthesia and central material service (CMS) support to the operating and procedure rooms. The following three rows (R – T) address the PACU workload and minutes of service for ambulatory procedures and surgical processing. Lastly, rows U and V related to the number of graduate medical education students that rotated through the operating rooms. The information compiled was calculated according to MEDCOM planning factors for anesthesiology, CMS, operating room, and PACU staffing requirements. This model also recommended specific positions an organization

should hire. Ultimately, the PAT, chaired by the Chief, DHCO, decided the staffing mix which was based on the case mix of surgical patients. Finally, the PAT made the final recommendation for staffing after taking ASAM requirements into consideration and the number of positions currently filled that would be available for the new surgical unit.

The fifth step was to determine the various locations and estimated construction costs, if applicable, for an ambulatory surgical unit. Currently, BAMC leadership is considering a few locations. A preliminary floor plan will be developed in accordance with (IAW) DoD Space Planning Criteria. Each location will have a reception and waiting area, a preoperative holding area, operating and procedure rooms, and a recovery room. In order to determine appropriate space requirements, a space allocation sheet that meets the space planning criteria based on forecasted workload is used. The variables necessary when considering space are; the number of surgical procedures per day, the average time per case, and the number of special operating rooms. This ensures that sufficient space is available as the facility increases workload in the upcoming years. The DoD's objective is to provide medical facilities that are responsive to functional requirements and are reasonably flexible to accommodate future changes (DoD Space Planning Criteria, 2004). Costs, such as construction, will be considered for each layout. This information was utilized when the financial return on investment or business case analysis was completed. As a final note, the planning guidance recommends that each facility should make every attempt to co-locate services, including inpatient and ambulatory surgery. Collocation, according to the DoD, offers the facility the ability to transfer staff according to workload between both surgical services and decreases space requirements (DoD Space Planning Criteria).

The sixth step in the methodology is the Business Case Analysis (BCA) adopted by MEDCOM. The Microsoft Excel Spreadsheet version 5.5 is currently utilized and was revised September 2004 (MAJ Speight, personal communication, October 17, 2004). The BCA is a tool that assists organizations in making financial decisions about a current or potential business practice. The objective of a BCA is to provide a comprehensive roadmap with supporting analysis to assess the impact of change within an organization (Alternate Funding Sources, 2003). An organization may submit potential projects to MEDCOM for consideration of funding. This funding is above the organizations yearly budget. A unique function of the BCA is that a self-sustaining criteria exists which means that a facility must produce annual cost savings in excess of annual costs in three years or less of implementing the initiative.

The BCA is a financial analysis that enables MTFs to evaluate the costs and benefits of projects against current operations or various courses of action. The key financial concept behind the BCA is Break Even Analysis (BEA), also known as Cost-Volume-Profit analysis, which is a technique to analyze the relationship among revenue, cost, and volume (Deak, 2002). Finkler and Ward (1999) define BEA as a technique for determining the minimum volume of output (ambulatory surgical cases) necessary for a program to be financially self-sufficient. Simply put, the concept is based on the formula Total Revenues = Total Costs. Total Revenue = price of a good x quantity of that good. Total Cost are composed of both fixed and variable costs, therefore, total costs = fixed cost + (variable cost per unit x quantity) (Finkler & Ward, 1999). Fixed costs are costs that do not vary in total over the relevant range, as volume increases or decreases, but that change inversely on a per unit basis (Finkler & Ward). For example, the cost of

leasing a piece of equipment remains the same for the year despite the number of patients seen. However as the number of patients increases (decreases) throughout the year, the per unit cost decreases (increases) because you have more patients to allocate the costs associated with the equipment (Finkler & Ward; CDR Garcia, personal communication, October 14, 2003). Variable costs are costs that do not change per unit as volume increases (decreases) but that change in total with a change in volume (CDR Garcia, personal communication, October 14, 2003). In this case, if you purchase three pieces of medical equipment at $10K for a total of $30K, you can expect the total cost to increase if you buy five pieces of equipment (CDR Garcia, personal communication, October 14, 2003). If revenue is greater than the new costs of performing the ambulatory surgery, then the project is pursued. In this analysis, the revenue may not be greater than the cost of starting this ambulatory surgical unit, however, it is important to identify which course of action breaks even the earliest.

The BCA template outlays the format for conducting the financial analysis. However, the current version of the BCA does not look at the current costs of providing ambulatory surgery within the main operating room. When utilizing the BCA template, only marginal costs are considered. A marginal cost is the change in total costs related to a change in volume or service offered (Finkler & Ward, 1999). In this case, the researcher and the PAT will estimate the additional surgical cases each course of action provides. Only the marginal costs associated with the additional APVs are included in the analysis. The BCA template identifies the additional number of surgical procedures estimated and the total investment required to perform the additional cases and the net savings or loss for a three year period for each course of action (COA).

In order to quantify total investment outflow these data points were obtained: labor, supply, equipment, facility, and other miscellaneous costs. First, the current cost of ambulatory surgery was obtained from the MEPRS step-down report for FY 2004 provided by the Resource Management Division. Marginal supply costs are obtained by totaling the 26.xx codes for each service from the MEPRS report and dividing that by the total number of cases for each service that occurred in FY 2004 (Deak, 2000). This provided an average supply cost per case per service. The number of estimated surgical cases were multiplied by the average cost per case to obtain the supply costs for each year. The number and mix of labor were taken from step four, which utilized the ASAM model. This occurred after the PAT determined whether additional staff members were needed to increase efficiency. The annual salaries were obtained from current labor contracts or local contracting salaries. Equipment costs would be dependent on the requirements for each course of action, which was determined by the subject matter experts such as operating room nurses, central material services, and logistics. Only the additional equipment required was included. Facility modifications included construction costs. The facility manager assisted in determining construction costs based on the modifications necessary to the existing building or any new construction requirements. Typically, construction costs are only required in the first year of the initiative. If necessary, miscellaneous costs, such as communication and automation requirements are included in the equipment breakdown.

The next portion of the template is entitled Benefits Cost Avoidance and Savings. This portion specifically relates to ambulatory surgery currently performed in the network that can be brought back into the facility or backlogged cases that could go to

the network if the care is not provided in a timely fashion. M2 provided the total number of cases by surgical service and the associated facility and professional fees (Mr. K. Martin, personal communication, October 21, 2004). In addition, planning factors were utilized to identify the number of cases performed in the network that have other health insurance (OHI) and were applied in the template under the title Benefits Direct to the MTF, which is the next element of the BCA. Third party collection (TPC) is also required. MEDCOM recognizes that patients may have OHI; however, once patients receive care in an MTF, many patient opt to discontinue private insurance (Mr. K. Martin, personal communication, October 15, 2004). Accordingly, a planning factor of 10% of patients with OHI was applied with the realization that only 60% of monies are collected. Therefore, the amount placed into the template was 60% of 10% of the ambulatory surgery cases performed in the network. By calculating the investment outlay and the cost avoidance and savings, the break-even point was realized. This information was an element considered in step seven, Decision Matrix.

The Decision Matrix is used by the Army as the means for making a selection. The objective of this tool is to identify the best course of action given specific criteria selected by the PAT. Using pre-selected criteria and weighting each criterion provided a numerical dispersion that allowed the researcher to identify the best course of action for BAMC (U.S. Army Command and General Staff College, 1993). The criteria selected for evaluation were the ability to expand, displacement effect, financial ROI, ability to meet GME, layout, location, most surgeries performed, and time to implement. Each criterion was given a weighted numerical value based on its relative importance. After the value of each variable was determined for each course of action, each COA was

ranked based on where each COA fell in comparison to the other COAs. The ranking was calculated in ascending order. The COA with the lowest value received the lowest ranking on one and the COA with the highest ranking received the highest ranking. Next, the rank of each COA was multiplied by the weight for each criterion. The COA with the highest score was the recommended decision. The intent of this aspect of the study was to replicate an approved methodology within MEDCOM. The Decision Matrix is an accepted tool for decision in the Army and was therefore valid. The recommendation from the matrix was reliable because the criterion and weights assigned to each were from the PAT. These members have over 10 years of experience related to ambulatory surgery and data collection.

Expected Findings and Utility of Results

The researcher expected to determine the best COA in order to provide ambulatory surgery within BAMC. The study will demonstrate historical workload, surgeries going to the network and surgeries currently on backlog. Additionally, the productivity study will demonstrate how BAMC's surgical service productivity compares to MGMA national standards for similar facilities in the private sector. Utilizing the BCA template, the researcher will also be able to identify the marginal costs associated with an increase in ambulatory surgery and whether the COA will break-even at the three year mark. All of these variables will then be ranked in accordance with pre-selected weighted criterion. This ensures that the organization objectively selects the best course of action.

Results

To facilitate the results of this extensive project, the results of each of the seven phases analyzed will be discussed in the order presented in the Methods section of this paper.

Step 1: Assumptions and Historical Workload Data

Throughout the analysis phase, the PAT made assumptions due to the complexity of this project. Within each section, various assumptions were made and will be identified as appropriate within each step. The following points are the over-arching assumptions made for this project.

The first assumption was that BAMC conducted an analysis of its current operating room efficiency prior to identifying a need for an ambulatory surgery unit. Throughout the course of this endeavor, a concern existed that current processes within the main operating room were inefficient. Due to time constraints, this researcher was unable to identify if, in fact, processes could be enhanced to provide for increased efficiency within the main operating room.

The second assumption made was that ambulatory surgery workload would continue to increase in the future. This became an important factor in step two as ambulatory surgery workload was forecasted. For example, in specialties such as orthopedics, ambulatory cases are decreasing due to BG Fox's guidance that inpatient orthopedic surgeries supercede all orthopedics ambulatory cases due to the global war on terrorism (GWOT). FY 2004 APVs for orthopedics are decreasing from FY 2003. Simply stated, the command had to prioritize cases given the number of operating rooms available. Theoretically, if an adequate number of operating rooms were

available, then the backlog that currently exists for orthopedics would not have occurred. Thus, the researcher assumed that services showing a decline in APVs would maintain their historical levels of workload in the future. In addition, the PAT concluded that, based on current operating room availability, APVs going to the Network and APV backlog will continue if additional operating room time it not available. Finally, surgical services who currently perform minor APVs within their clinic procedure rooms would continue business as usual. Minor APVs were not examined as part of the ambulatory surgery workload.

A third assumption related to staffing and efficiency. Due to the number of inpatient surgery cases referred to the Network, BAMC believed that by constructing a same day surgery unit, a percentage of inpatient cases will be recaptured. This assumption was important in step four when it came to identifying staffing requirements for each COA. The ability to shift current staff members from the same day surgery center proved to be cost effective. However, due to the assumption that the main operating room would be utilized for inpatient cases once outpatient cases were displaced, additional operating room staff was required and the ability to use existing staff was not feasible. Furthermore, the PAT firmly believed that efficiency would be enhanced with dedicated contracted staff as opposed to hiring General Service personnel. Therefore, expenses related to staffing were calculated based on the local market and BAMC's existing contracts. Experience within BAMC showed that a performance based contract would enable the same day surgery unit to decrease turnover and surgery times, an important factor related to calculating the required number of operating rooms in step four. The PAT concluded that a performance-based

contract for staff would allow the facility to decrease turnover times by 50%. This researcher adjusted turnover times by service by 50% and utilized this to calculate the required number of operating rooms. Lastly, providers stated that the primary bottleneck in the surgery process was due to the non-availability of operating room space. Therefore, additional providers were not considered in the staff analysis since providers concluded that those currently on staff need the additional operating room time.

A fourth assumption related to the layout of an ambulatory surgery unit. Due to design costs for constructing a layout and the lack of this expertise within BAMC, an assumption was made that the layout for leasing and building a free standing facility was optimal. This was important as members of the PAT analyzed each COA using the Decision Matrix.

In addition to identifying assumptions, step one entailed capturing historical workload data. This endeavor proved to be more difficult and enlightening than expected. As proposed, the data was pulled from OPLOG by Mr. Ken Martin, analyst from DHCO. Mr. Martin pulled the historical ambulatory workload data for FY 02 - FY 04. For reliability and validity reasons, the data retrieved from OPLOG were compared to the data found in CHCS.

Comparing historical workload data between CHCS and OPLOG, there was a 326% discrepancy of the data for one service. A comparison of workload data was made between each of the systems from FY 02 - FY 04 (see Appendix H). Although CHCS is the official DoD system, there are numerous inconsistencies in workload data between OPLOG and CHCS. Therefore, this researcher met with the leadership from each of the surgical services to discuss the inconsistencies and examine how each

clinic inputs surgery requests within CHCS and OPLOG. This researcher found that the organization depended on OPLOG more than on CHCS. In fact, 5 of the 11 clinic chiefs did not understand how CHCS related to capturing APV workload and how ambulatory surgery was coded within that system. Additionally, the meticulous process the staff used to input ambulatory surgeries and CPT codes within OPLOG caused the team to choose OPLOG as the system that would be used as their major source of data. In addition, information such as turnover and surgery times, was to be pulled from OPLOG. Although the data in OPLOG were input by each of the separate service medical clerks, each clerk has received on-the-job training for coding. When a surgical case was input into OPLOG with an associated CPT code, the scheduler verified that the CPT code was accurate (Mr. L. Walls, personal communication, September 27, 2004). Additionally, Ms. Suzanne Wilde (personal communication, September 29, 2004), who works in the DOS, provided a second validation of each CPT code. On the day the surgeon performed a surgery, the physician was required to submit a DA 4107, Operation Request and Worksheet, commonly referred to as a "buck slip." It identifies the patient, type of surgery performed, and other pertinent information. If the CPT code was inaccurate or additional procedures were performed, then Ms. Wilde modified the OPLOG entry. Ms. Wilde has received on-the-job training.

During the course of this study, patient information was not procured. However, individual questionnaires were utilized in step seven, the Decision Matrix. Here individuals were asked to rate each of the eight criterion in order of importance. To ensure the privacy for each of the raters, each of their responses was transposed into a

matrix that was coded numerically to ensure respondent confidentiality. There were no other ethical considerations for this study.

Based on the systems within the facility, the information available from each system and the concern for reliable data, the following systems for workload were utilized: 1) BAMC's ambulatory surgical workload, OPLOG, 2) Network ambulatory surgical workload, M2, 3) BAMC's ambulatory surgery backlog, OPLOG and clinic registers, 4) ambulatory surgery turnaround time and surgery time, OPLOG, 5) provider's time - FTE by service, DHMRS, and 6) costs associated with workload, MEPRS.

Step Two: Forecast Ambulatory Surgery Demand

The second step was to forecast the future ambulatory surgery cases given historical workload. This estimate allowed the researcher to determine the required number of operating rooms, staffing, and space requirements, thus, the reliability of this step was imperative. The researcher intended to utilize FY 02 - FY 04 historical workload from OPLOG, as discussed in step one. Carefully analysis and numerous discussions with the leadership from surgery and DHCO revealed that none of the surgery clinics had been adequately capturing ambulatory surgery workload prior to FY 04 in OPLOG. Comparing FY 02 - FY 04 workload in OPLOG by surgery clinic, the researcher identified that ambulatory surgery decreased by 30% from FY 02 – FY 03 and then increased by 15% from FY 03 - FY 04. A comparison was made between CHCS and OPLOG to see if there was a similarity in the percent change in workload between the two years. After analyzing the data, a delta of 6% in FY 03 and 188% in FY 04 were found. Table 1 reflects an example of the discrepancy between CHCS and

OPLOG from FY 03 – FY 04. Based on their professional experience, the leadership was adamant that workload had not decreased in FY 03 and the data were not accurate. Therefore, the forecasting equation was modified and only the data from FY 04, by month was used as opposed to the original method.

Table 1

FY2003 Compared to FY2004 Ambulatory Surgery Workload

Service	FY03			FY04		
	OPLOG	CHCS	% Chg	OPLOG	CHCS	% Chg
Cardiovascular	12	23	48%	8	12	33%
General Surgery	504	542	7%	571	198	188%
Gynecology	407	360	13%	557	142	292%
Neurosurgery	47	74	36%	20	7	186%
Ophthalmology	667	517	29%	942	221	326%
Oral Surgery	86	317	73%	54	108	50%
Orthopedics	494	604	18%	483	206	134%
Otolaryngology	436	380	15%	565	138	309%
Plastic Surgery	152	111	37%	84	34	147%
Urology	120	236	49%	120	113	6%
Vascular	82	64	28%	60	22	173%

Source: OPLOG and CHCS

This researcher forecasted ambulatory surgery workload by month from FY 05 - FY 08 using the Time Series and the Seasonal Regression Models for each of the 11

services. As noted in the literature review, forecasting beyond five year provided inaccurate results. The first step was to identify the most accurate method based on FY 04 historical workload. To do this, this researcher first examined the total ambulatory surgery by service using the Simple Time Series and the Seasonal Regression Models. Then the forecasting error was calculated using MAPE to identify, between each of the two models, the one that minimized the forecasting error. Recall that, if the MAPE value of the Time Series Model is smaller than the MAPE of the Seasonal Regression Model, then the Time Series Model is preferred and vice versa. As indicated in Table 2A and 2B, the Seasonal Regression Model had a MAPE of 16.2% compared to the Time Series Model, which had a MAPE of 25.9%. The researcher anticipated that the Seasonal Regression Model would provide the most accurate forecast for the future.

Table 2a

Mean Absolute Percent Error of Seasonal Regression Model

Month	FY2004 APVs (X)	FY2004 Forecast (F)	Error (X-F)	Absolute Error |X-F|	Absolute % Error |X-F/X|*100	Squared Error $(X-F)^2$
Oct	299	233	66	66	22.07	4356
Nov	289	226	63	63	21.80	3969
Dec	266	219	47	47	17.67	2209
Jan	258	253	5	5	1.94	25
Feb	266	246	20	20	7.52	400
Mar	366	238	128	128	34.97	16384
Apr	332	253	79	79	23.80	6241
May	299	246	53	53	17.73	2809
Jun	305	239	66	66	21.64	4356
Jul	262	262	0	0	0.00	0
Aug	300	255	45	45	15.00	2025
Sep	223	247	-24	24	10.76	576
				Sum	195	43350
				Mean	16.2	3613

Source: Calculations using MAPE formula

Table 2b

Mean Absolute Percent Error of Time Series Model

Month	FY2004 APVs (X)	FY2004 Forecast (F)	Error (X-F)	Absolute Error |X-F|	Absolute % Error |X-F/X|*100	Squared Error $(X-F)^2$
Oct	299	344	-45	45	15.05	2025
Nov	289	346	-57	57	19.72	3249
Dec	266	348	-82	82	30.83	6724
Jan	258	351	-93	93	36.05	8649
Feb	266	353	-87	87	32.71	7569
Mar	366	355	11	11	3.01	121
Apr	332	358	-26	26	7.83	676
May	299	360	-61	61	20.40	3721
Jun	305	362	-57	57	18.69	3249
Jul	262	365	-103	103	39.31	10609
Aug	300	367	-67	67	22.33	4489
Sep	223	369	-146	146	65.47	21316
				Sum	311	72397
				Mean	25.9	6033

Source: Calculation using MAPE formula

Based on this finding, the third step was to forecast by service the workload for FY 05 - FY 08 using the Seasonal Regression Model. An example of this methodology, can be found in Appendix I for general surgery. In reviewing general surgery, the Seasonality Regression Model showed that the slope of the regression line was a negative number (b = 2.25). Therefore, future workload estimates would continue to show a decrease by 2.25 with FY 06 resulting in negative workload estimates. Although this is mathematically accurate, this researcher strongly believed that this was not realistic. Based on this finding, this researcher constructed a control chart for general and overall ambulatory surgery to see what trend, if any, existed for this particular service and ambulatory surgery as a whole. Under the direction of LTC Christopher

Pate (Baylor faculty), a control chart was designed and results found that although there was common cause variation in FY 04 historical workload from month to month, there was no special cause variation (three standard deviations from the mean) for either ambulatory surgery as a whole or general surgery (see Appendix J). Therefore, the common cause variation was do to chance alone (LTC C. Pate, personal communication, November, 12, 2004). Therefore, the Seasonality Regression Model was not the preferred method to estimate future workload.

Based on this finding, the Time Series Forecasting Model was recommended by LTC Christopher Pate (personal communication, November 12, 2004). Table 3 illustrates the forecasting results for each of the 11 surgical services for FY 05 – FY 06. Of special interest, cardiothoracic, neurosurgery, orthopedics, otolaryngology, and vascular ambulatory surgery showed a decrease in future workload. This researcher recommended to the PAT that those services demonstrating a decrease in workload should maintain their FY 04 workload figure based on the assumption discussed in step one. The FY 04 workload would serve as the planning factor for the forecasted or future workload as shown in Table 3. Due to the need for BAMC to prioritize inpatient surgery over outpatient surgery because of the GWOT priority, the ambulatory surgery workload decreased for those services in the past year. This was evident by their decrease in workload and increase in backlog for the same services. Conversely, general, gynecology, ophthalmology, oral, plastic, and urology surgical services indicated an increase in their future workload after analyzing the Time Series Regression Model. As a planning factor for these services, the average of FY 05 – FY 08 was taken to arrive at

a planning factor for the forecasted or future workload for future steps as shown in Table 3.

Table 3

Forecasted Ambulatory Surgery Visits by Service

Service	FY2004	FY2005 Forecasted Work Load	FY2006 Forecasted Work Load	FY2007 Forecasted Work Load	FY2008 Forecasted Work Load	Planning Factor Forecasted Work Load
Cardio-thoracic	8	8	8	8	8	8
Gen Surgery	571	591	610	630	650	620
Gynecology	557	570	582	595	607	589
Neurosurgery	20	20	20	20	20	20
Ophthalmology	942	1124	1307	1489	1671	1398
Oral Surgery	54	55	56	57	58	57
Orthopedics	483	348	212	77	0	483
Otolaryngology	565	426	286	147	7	565
Plastic Surgery	84	84	84	84	84	84
Urology	120	190	261	331	402	296
Vascular	60	60	60	60	60	60
Total Starts	3456	3476	3486	3498	3567	4179

Note: Workload for all beneficiaries (includes over 65 patients)

Since COA six requires utilizing the fifth floor for ambulatory surgery and performing all over 65 ambulatory cases in a private surgery center, a subsequent Time Series Model was run using FY 04 ambulatory surgery cases performed for patients under the age of 65. The same methodology and assumptions above were employed and the results are shown in Table 4. This information was utilized to identify the required number of operating rooms in step four.

Table 4

Forecasted Ambulatory Surgery Visits by Service

Service	FY2004	FY2005 Forecasted Work Load	FY2006 Forecasted Work Load	FY2007 Forecasted Work Load	FY2008 Forecasted Work Load	Planning Factor Forecasted Work Load
Cardio-thoracic	3	3	3	3	3	3
Gen Surgery	474	483	492	501	510	497
Gynecology	514	560	607	653	699	630
Neurosurgery	20	20	20	20	20	20
Ophthalmology	287	277	268	258	249	263
Oral Surgery	50	51	52	53	54	53
Orthopedics	451	374	297	220	143	451
Otolaryngology	498	417	337	256	176	498
Plastic Surgery	79	9	-61	-131	201	79
Urology	65	65	65	65	65	65
Vascular	52	52	52	52	52	52
Total Starts	2493	2308	2129	1947	2169	2611

Note: Workload for beneficiaries (does not include over 65 patients)

Step 3: Productivity Model

The third step was to analyze the productivity of the providers FY 04 FTEs and the associated workload using the productivity model developed by Tripler Army Medical Center and utilized by CPT James Deak. The intent was to identify whether surgical servicing performing same day surgery had the capacity to handle additional surgical cases and to compare BAMCs productivity to MGMAs national average. Due to the complexity of this endeavor, only five of the ten clinics were analyzed for this portion. The results of the model are shown in Appendix K.

According to the FY 04 DHMRS Report, providers performed inpatient, outpatient, same day surgery, and GME throughout the year. Since the information within DHMRS already calculates FTEs (as opposed to capturing only hours worked), there was no need to recalculate the FTEs for each service as originally proposed. To

demonstrate the calculation process, this researcher will utilize Ophthalmology Services as the example. Data are provided in Table 5 and Appendix A.

Table 5

Ophthalmology FY2004 Productivity

Opthamology Productivity Study - Outpatient	FY2004 FTEs	FY2004 Monthly FTEs
Available FTEs Outpatient Clinic	22.44	1.9
Residents/Interns/Fellows Outpatient contributing FTEs	31.67	2.6
Available FTEs in Ambulatory Surgery	3.78	0.3
Residents/Interns/Fellows APVs contributing FTEs	3.72	0.3
Physician Assistant APVs	0.92	0.1
Total Outpatient and APV FTEs	**62.53**	**5.1**
	FY2004 Workload	**FY2004 Monthly Workload**
Outpatient Workload	28665	2,389
APV Workload	900	75
Total Outpatient and APV Workload	**29,565**	**2,464**
Productivity Analysis:		
Formula: (FY2004 monthly workload/FY2004 monthly FTEs) x 12 months to annualize		
Formula: (2,464/5.1 FTEs) x 12 months	**5,758**	Average visits per year
Compared to Medical Group Management Association (MGMA) Benchmarks:		
25th Percentile	1,266	BAMC is above
Median	1,817	BAMC is above
Mean	2,201	BAMC is above
75th Percentile	2,921	BAMC is above
90th Percentile	3,939	BAMC is above
BAMC General Surgery	**5,758**	

For FY 04, the FTEs attributed to the outpatient clinic totaled 54.11 (this included staff physicians, residents, interns, and fellows) and the FTEs attributed to ambulatory surgery was 8.42 (this included staff physicians, residents, interns, fellows, and physician assistants) for a total of 62.53 FTEs associated with outpatient and ambulatory surgery care. Dividing 62.53 FTEs by 12 months, resulted in a monthly average of 5.1 FTEs for Ophthalmology. The remaining time was devoted to administrative, GME, field exercise, leave, etc. The same method was used to quantify the monthly average outpatient visits and surgical cases that the Ophthalmology Services performed. For outpatient services, Ophthalmology performed 28,665 visits,

followed by 900 ambulatory APV for a total of 29,565 visits/APVs for FY 04. By dividing 29,565 visits by 12 months, Ophthalmology Services performed an average of 2,464 visits monthly. To assess Ophthalmology's productivity level, the following formula was utilized:

Productivity = (FY 04 monthly workload/FY 04 monthly FTEs)x 12 months

By multiplying the formula by 12 months, in essence the data is annualizing. For this example, the formula was:

Productivity = (2,464/5.1FTEs) x 12 months = 5,758 average monthly visits

Using this formula, Ophthalmology has a monthly average of 5,758 visits which corresponded with the FTEs. This average was compared to the FY 04 MGMA benchmarks for Ophthalmology in an academic teaching in the 90th percentile. Comparing Ophthalmology's 5,758 visits to the MGMA national average of 3,939 (MGMA, 2003), this service was out-performing the private sector.

Based on the method used above, the remaining four surgical service's productivity was calculated. General Surgery's average monthly FTEs was eight (8), with a monthly workload of 1,055. Comparing this to the MGMA 2003 national average of 2,557 visits in the 90th percentile, General Surgery was under-performing compared to the private sector. Comparing the 2003 MGMA national average in the 75th percentile of 1,454 visits to BAMC's 1,579 visits, BAMC surpassed the private sector.

Obstetrician Services had on average 14 monthly FTEs and 1,986 monthly visits. This equated into 1,713 visits/APVs on average per month based on 14 FTEs. Comparing this to the 2,891 MGMA (2003) national averages in the 90th percentile, OB/GYN was performing below the national average. This was true for the 75th

percentile as well. However, BAMC's Obstetrician Service was higher than that of the private sector mean (1,231 visits) and the median (750 visits) (MGMA, 2003).

The fourth service, Otolaryngology, had six (6) FTEs and 825 outpatient visits resulting in an average of 1,644 visits per year. Comparing this to the 2003 MGMA benchmark of 3,862 visits in the 90th percentile, Otolaryngology Service fell below the private sector. This remained true when comparing Otolaryngology Services to the national average in the 75th percentile, the mean (2,036), and the median (1,983) (MGMA, 2003). BAMC only surpassed the national average at the 25th percentile (1,390) (MGMA).

The last service analyzed, Orthopedics, had 11 FTEs and 2,168 outpatient and APVs for FY 04. This resulted in an average of 2,395 visits per year. Conversely, FY 04 MGMA visits was 4,145 for the private sector. BAMC's Orthopedic Services surpassed the private sector in the mean and median, and at the 25th percentile.

Overall, private sector services in the 90th percentile working in an academic setting surpassed BAMC's services. The exception was Ophthalmology Services. The results for each of these services demonstrated that providers were not as productive compared to the private sector at the 90th percentile. Although general surgery was competitive at the 75th percentile and even more services were comparable when this researcher compared BAMC to MGMAs means, median, and performance at the 25th percentile, the ability of the providers to increase workload appeared to be possible. One may argue that the military's mission does not allow one to compare BAMC's productivity to the civilian sector due to the deployment of providers. However, this productivity study related workload with the associated FTEs, as opposed to evaluating

total providers. In addition, this productivity study did not attempt to examine whether a sufficient amount of a provider's time is spent providing patient care, which was a limitation of this step. Another potential limitation of this productivity study related to how providers reported FTEs. According to Ms. J. Moore (personal communication, December, 15, 2004), reporting of FTEs differs based on the providers experience and general understanding of what workload constitutes what FTE category. For example, if providers inaccurately assess their time performing patient care, then the number for FTEs is inflated; in turn, productivity will appear to be lower. This researcher did not attempt to validate the data placed into the system. Rather, it is recommended that this analysis be conducted for the remaining services and presented to the department chiefs for further analysis.

Step 4: Operating Rooms and Staffing Requirements

The first requirement of step four was to calculate the number of operating rooms required based on forecasting historical workload in step two and identifying network and backlog cases by service for ambulatory surgery. Once the number of operating rooms was identified, the staffing requirements using ASAM were identified since staffing was based on the number of functional operating rooms. Recall that the formula published by the DoD Space Planning Criteria to determine the number of operating rooms required was:

$$\text{ORs Required} = \frac{(\text{Daily No. of Cases}) \times (\text{Average Time in Minutes per Case})}{360 \text{ Minutes per Day}}$$

The data system utilized to obtain this information was from OPLOG, which involved slight modifications since the data within OPLOG were not presented as the formula

requires. The first step was to identify the daily number of cases using the forecasted data calculated in step two. The second step was to identify the average time in minutes per case. The average time included the actual start to end time for an ambulatory surgery case plus the turnover time between ambulatory surgery cases. The average operating time per service was available by month in hours. By dividing the total ambulatory surgery time in hours by the number of same day surgery cases for that same service and multiplying that number by 60 minutes, the researcher identified the average time in minutes by service for operating time (see Appendix L). Calculating turnover time by service in minutes was directly available from OPLOG however, analysis revealed that some ambulatory surgery cases turnover time exceeded 60, 90, and 120 minutes. Based on the experience of the PAT, all cases whose turnover time was 60 minutes or greater was discounted (see Appendix M). The assumption was that turnover time of this nature was due to issues or constraints outside the definition of turnover time. The third step was to include ambulatory surgery backlog for each of the eleven services, which was accomplished in step one (see Appendix B). This step was imperative since historical surgery cases was only workload and did not tell the true demand for ambulatory surgery within BAMC. Theoretically, if there were no cases on backlog, one may posit that workload was comparable to the demand. Since OPLOG had not been mandated within the facility except to schedule cases, four of the surgical clinics were not placing their true demands for ambulatory surgery within OPLOG. Some of the clinics, such as orthopedics, placed all of their ambulatory surgery requirements within OPLOG, whereas other clinics utilized a green logbook. This researcher met with each of the services to validate the data within OPLOG and actually

count what was in their logbook, if applicable. An assumption made at this point was that the data identified at a point in time were representative of typical surgical backlog. The data were pulled and researched in November 2004 but were not analyzed over a period. The last step was to incorporate the number of ambulatory surgery cases that occurred in the Network identified in step one (see Appendix B). Similar to identifying the backlog, network cases assisted in identifying how many operating rooms BAMC required. Since the inception of T-NEX, BAMC had the first right of refusal for cases moving to the network (COL S. Cuda, personal communication, January 15, 2005). This allowed BAMC the opportunity to first identify whether or not the facility can provide the surgery. If the facility did not have that capability within a given time period, the case was sent to the network. Therefore, the ability to determine current workload plus backlog and network surgery cases was imperative to this analysis.

The results of this phase is outlined in Appendix N. For this step, the researcher calculated four scenarios for how many operating rooms BAMC required. Within each of the four scenarios, three COAs were analyzed. The first scenario looked at forecasted workload from step two only. The second scenario included forecasted and backlogged workload. The third scenario included forecasted and network workload and the fourth scenario included forecasted, backlogged, and network workload. Within each of the four scenarios, planning factors were used to determine how many operating rooms BAMC requires. Since the intent was to optimize the use of each operating room, this researcher strongly believes that in order to best use the facilities, processes must be modified. However, the ability to articulate the modification of an operating room process given a project of this magnitude was unrealistic. Within the formula used to

assess the required number of operating rooms, there were only two variables that could potentially be optimized: turnover and surgery times. Members of the PAT concluded that the ability to decrease turnover time was considered an achievable goal, however, it was not in favor of decreasing surgery time. Future studies should take this perspective into account. The ability to modify turnover time resulted in three COA within each scenario.

The first scenario focused on forecasted workload only. The first planning factor or the worst-case COA used FY 04 turnover times. This resulted in the need for five operating rooms to accommodate forecasted workload only. The second planning factor, or the most probable COA, agreed upon by the PAT, was to decrease turnover time by 50%. In all but one service, reducing turnover time by 50% still did not bring BAMC's turnover time to the prescribed 15-minute benchmark established in literature and seen in ambulatory surgery centers within San Antonio. Nevertheless, the PAT was adamant that this was an achievable goal for BAMC given dedicated staffing assets. The result was that BAMC required 4.5 dedicated operating rooms. The last planning factor or best-case COA utilized the 15-minute benchmark for turnover time as prescribed in the literature. In this case, BAMC still required 4.5 operating rooms. For planning requirements, this requirement was rounded to five operating rooms.

The result of the second scenario, which focused on forecasted and backlogged workload, was similar for the most probable and best case COAs above. The worst-case COA using FY 04 turnover times resulted in the need for six operating rooms, whereas the most probable and the best case COAs showed that BAMC required 5.4

dedicated operating rooms. For planning factors, this requirement was rounded to five operating rooms, the requirement for scenario one.

The result of the third scenario, which focused on forecasted and network workload, increased the operating room requirements. The worst-case COA using FY 04 turnover times resulted in the need for seven operating rooms, whereas the most probable and the best case scenario showed that BAMC required 6.3 dedicated operating rooms. For planning purposes, this requirement was rounded to six operating rooms.

The result of the fourth scenario, which focused on forecasted, backlogged, and network workload, increased the operating room requirements. The worst-case COA using FY 04 turnover times resulted in the need for eight operating rooms. The most probable COA required 7.2 or seven operating rooms and the best case COA showed that BAMC required 6.3 or six dedicated operating rooms.

Since COA six included performing all over 65 ambulatory surgery cases in a private surgery center, the required number of operating rooms was recalculated based on their associated workload as forecasted in step two (see Appendix O). The first step identified the number of cases using the forecasted data calculated in step two. The second step identified the average time per case. Once again, the data were re-pulled from OPLOG and delineated operating and turnover time in hours for same day surgery cases for those under age 65 (see Appendix P). Turnover times were assumed to be the same for this population, unlike surgery times. The third step, identification of backlog of ambulatory surgery, was not broken out by age group. Therefore, the backlog data utilized for the calculations above were assumed to be for all patients

under the age of 65 (see Appendix B). The last step, which was to identify the number of ambulatory surgery cases that have occurred in the network, was the same data used in the calculations above. Since the initial calculations for operating rooms assumed that over 65 patients would not be brought in from the network, the data were already identified as all patients under the age of 65.

By removing over 65 same day surgery cases, the number of operating rooms required was reduced by at least one under each scenario. The first scenario, which forecasts workload, only required four operating rooms to accommodate that workload for the worst-case COA. Reducing turnover times for the most probable and the best-case COA showed that BAMC required three dedicated operating rooms. The result of the second scenario, which focused on forecasted and backlogged workload, identified the need for five rooms under the worst-case COA and four dedicated rooms under the most probable and best case COA. The third scenario, forecasted and network workload, increased the operating room requirements by one. The worst-case scenario entailed six operating rooms, whereas the most probable and the best-case COAs required five dedicated rooms. The fourth scenario, which took into account forecasted, backlogged, and network workload, continued to cause an increase in the operating room requirements by one. The worst-case COA resulted in the need for seven rooms. The most probable COA necessitated six rooms followed by the best case COA that showed that BAMC required five dedicated operating rooms.

This information was essential to calculate staffing needs and the marginal supply costs in step six. Each of the six COAs allowed providers to perform a number of cases based on the operating rooms available. Linking workload to the required number

of operating rooms enabled this researcher to calculate how many additional ambulatory surgical cases could be performed for each COA. For example, the first COA did not allow BAMC to perform additional cases, beyond what was performed in FY 04. In contrast, building a freestanding surgical center would allow BAMC to construct seven operating rooms. This afforded BAMC the opportunity to perform backlog, network, and future surgery cases based on the information provided in this step.

The second phase of step four was to calculate staffing requirements for each COA. Staffing is directly related to workload, which is directly related to the required number of operating rooms. The ASAM model, the tool formatted to project staffing requirements, was utilized as a guide for the PAT to assist in identifying staffing needs. The PAT concluded that the ASAM model recommended excessive staff for each COA. Therefore, COL Peralta, the Chief of Perioperative Nursing Services and the Head Nurse of the SDS unit, assisted in evaluating the ASAM staffing proposal and made final recommendations for this step.

The ASAM model used the population that the facility currently serves, (which, in this case, was 43,100 beneficiaries) (Line A), as well as projecting the future or forecasted population (see Appendix Q). Using the MCFAS system, the forecasted population was estimated to be 83,848 beneficiaries by FY 08. An analysis showed that historically BAMC has had up to a 2% increase in its beneficiary population per year (Mr. K. Martin, personal communication, December 20, 2004). To ensure a realistic prediction of the future population, this researcher added 2% to the forecasted population in Line B, rather than relying on the population figures from MCFAS (see

Appendix Q). Next, the model estimated the forecasted average monthly number of surgical cases (Line H) based on the forecasted population in Line B and the current average monthly number of surgical cases performed in the operating room suite requested in Line G. The forecasted average monthly number of cases produced was 310 as opposed to the 348 ambulatory surgical cases that were forecasted in step two. This provided some validity to the estimate provided in step two. Thus, this researcher continued to use 348 surgical cases as the planning factor as shown in Appendix Q, Line H. Line I includes network and backlog surgical cases by month, which was calculated by dividing total network and backlog cases and dividing by 12 months. Data fields J through Q were assumed to be of no concern for this project. Since BAMC does not perform deliveries at its facility, the PAT assumed this business practice would continue in the future (see Appendix Q, Line J). Additionally, most surgical centers do not perform cases after 5:00 p.m. due to low demand by providers or patients. Since BAMC is designated as a level I trauma center, the main operating room is used for cases after 5:00 p.m.. Therefore, Line K, which refers to hours of operation, was assumed to be zero for this analysis. Lastly, the PAT was adamant that the surgical center would need dedicated staff in order to optimize its process and recommended a performance-based contract. Therefore, data fields L through Q did not affect this staffing assessment.

The annual number of patients seen in the PACU was provided from the Officer in Charge of the SDS Center who is responsible for the Phase I and II recovery areas. The annual minutes of service for ambulatory procedures and surgical processing were obtained from the MEPRS system. The annual number of military students is based on

FY 05 students attending training at BAMC and was provided by the Chief of the Education Department.

There were certain data fields within the ASAM model that were automatically calculated based on the information provided above. This researcher examined the planning factors and made modifications based on BAMC's data as opposed to using projections provided by the ASAM model. One planning factor was the average number of hours per surgical case. ASAM used three hours as the planning factor. On average BAMC has 1.7 hours per ambulatory surgery case, which included the operating and turnover times. Thus, this data point was modified to reflect 1.7 hours compared to 3 hours. Based on this modification, ASAM recognized that BAMC required seven operating rooms to perform the forecasted, backlog, and network surgical cases. This matched the methodology utilized by this researcher to calculate required number of operating rooms, shown in Appendix I.

This researcher intended to run the model for each of the COAs that required a staffing assessment. Out of the six COAs, only two required an independent staffing assessment 1) COA two – build a free standing surgery center since seven operating rooms would be projected 2) COA five – convert the 5th floor labor and delivery unit to a same day surgery center which can facilitate only six operating rooms. Note that COA five and COA six both used the 5th floor therefore, the same staffing assessment could be utilized for both COAs. After analyzing the staffing recommendations under the first COA, the PAT utilized this model as a guide to staff both COAs.

Based on the data provided in the model, the staffing requirements projected for a surgery center were identified by work center and included; Anesthesiology, Operating

Room & Central Material System (CMS), Nursing Anesthesia, PACU, and Ambulatory procedures. The model further delineated the recommended breakout to assist in identifying the staff mix within each of the work centers mentioned above. For a total of seven operating rooms, the model recommended 16 anesthesiologists, 62 operating room and CMS personnel, 18 nursing anesthesia providers, 14 PACU and 22 ambulatory surgery staffing personnel (see Appendix Q). The PAT felt the staffing level was too high. In their professional experience, units were rarely staffed at the ASAM level. Based on this staffing model and professional experience, the Chief of Anesthesiology and Nurse Anesthesia, as well as the Chief of the Operating Room and the Officer in Charge (OIC) of the SDS unit proposed staffing for each scenario. Recall that staffing was a function of the number of operating rooms and since some of the COAs had the same number of rooms, staffing requirements were the same.

The first COA, maintain the status quo, involved no additional staffing since processes would not be changed or optimized under this scenario. The second COA, build a freestanding same day surgery center, required the highest number of personnel. In this scenario, the facility would be built to manage seven operating rooms enabling BAMC to perform the greatest number of surgeries; this included forecasted, backlogged, and network surgical cases. Table 6 illustrates the staffing requirements for this COA. Since the PAT understood that the administrative staff from BAMC's current SDS unit would be utilized for each of the COAs, this staffing number was subtracted from the total number of staff members required for this section. The SDS unit had five registered nurses, seven licensed practical nurses, and one medical clerk for 13 personnel. In addition, the OIC and the Noncommissioned Officer in Charge (NCOIC)

positions would move from the SDS unit to the new surgical center, which was taken into consideration when deciding on additional staffing needs. The total cost for a performance-based contract that included the staff recommended in Table 6 was approximately $2,962,956.00 for 46 personnel. This staffing estimate was based on FY 05 salaries currently seen in the San Antonio area and retrieved from the internet website salary.com. Since the PAT recommended a performance-based contract, the exact number of staff members was estimated and special circumstances such as leave, continuing education training, and lunch coverage were not included in this analysis per the guidance of the Chief, PAT.

Table 6

Staffing Requirements for COA 2: Build a Same Day Surgery Center

Positions	Total Staff Required
Anesthesiologist	1
OR Nurse (8)/CMS Nurse (1)	9
OR Technician (7)/CMS OR Technician (7)	14
Operating Room Scheduler	1
Recovery Room Nurse	7
Licensed Practical Nurse	4
PACU Administrative Clerk	1
Nurse Anesthesia Provider	7
Housekeeping	2

The third COA, which partitioned Core C of the main operating room, had four operating rooms. Analysis for FY 04 showed that ambulatory surgery accounted for an

average of 45% of all surgical cases and inpatient surgeries account for 55%. FY 03 data demonstrated that ambulatory surgery accounted for 55% of total surgeries (inpatient and ambulatory). However, the requirement to perform inpatient surgeries for GWOT patients has increased since FY 04. Therefore, the percentage of ambulatory cases in relation to the number of surgical cases was beginning to decrease as seen in FY 04 – FY 05. In order for BAMC to perform the lowest number of surgical cases the unit handled in FY 04, five operating rooms would be required with the ability to increase capacity to six operating rooms. Until the level of inpatient surgeries decreases or the level 1 trauma mission is modified, only five operating rooms may be dedicated to ambulatory surgery. With the assurance that turnover time could be reduced by 50% with the implementation of a performance-based contract, that same assumption will be made for this scenario. Therefore, five operating rooms would enable the organization to handle forecasted and backlogged surgical cases (see Appendix N). It is important to note that BAMC also has the ability to determine whether the 746 backlog cases are replaced with 746 network surgical cases. In this case, the backlog would continue unless additional processes to increase optimal use occurred. Given this scenario, staffing would only increase by two registered nurses, which would annually cost a total of $103,402.00. The current staffing mix of the main operating room included nursing, operating room technicians, and administrative support staff. Throughout the years the number of contracts has increased and has become unmanageable (LTC L. Leandry, personal communication, November 10, 2004). The PAT recommended that if this COA is instituted, the current contracts should be consolidated into one. In that case, the cost of this staff mix will probably be lower than what BAMC currently pays. However, this

was not analyzed and the assumption by this researcher is that there will be no additional cost savings.

The fourth COA, lease a same day surgical center, required minimal staff since the estimate provided to lease out the facility included the staff required to run the clinic. The staff provided under this alternative were medical and nonmedical personnel, less the surgeons and anesthesiologists. One concern under this scenario was that BAMC relied on nurse anesthesia providers for most of their same day surgery cases as opposed to anesthesiologists, which are required at private clinics in the San Antonio area (Ms. J. Riley, personal communication, December 15, 2004). BAMC may consider hiring additional staff members other than anesthesiologists if the staff provided by the clinic does not meet BAMC's needs. However, the assumption is that the staff provided did meet BAMC's needs. The cost estimates for this scenario were for six anesthesiologists, which are estimated at $320,000.00 per provider, for a total of $1,920,000.00. This information is provided in step six under the business case analysis for this scenario.

The fifth and sixth COAs, converted the 5th floor labor and delivery unit to a same day surgery center, which required similar staff personnel to step two. In both of these scenarios, the 5th floor had two operating rooms utilized by the pain clinic. Within this area, the facility manager determined that only four additional operating rooms could be constructed, for a total of six rooms. For COA five, the workload would include forecasted and network cases. For COA six, since the over 65 population surgeries would be performed in a private facility, where the physicians would perform the surgery, BAMC would be able to handle the forecasted, backlog, and network cases on

the 5th floor. An important point to note is that if BAMC elects to accept but modify COA six by sending over 65 surgical patients to the network and not having providers perform those surgeries, then BAMC would save $640,000.00 since 2 of the 3 anesthesiologists would not be required. Aside from this point, the number of operating rooms for both COAs was six. Therefore, staffing estimates would be the same for the fifth floor. The only additional staff members required for COA six were the two anesthesiologists required in order that the physicians may be able to perform the over 65 cases in a private surgery center. Table 7 illustrates the staffing requirements for both COAs. The total staff members required were 36 personnel, which did not include the 13 staff members reassigned from the same day surgery center. The total cost for a performance-based contract that included the staff recommended in Table 7 was estimated to be at least $2,464,297.00 for COA five and $3,104,297.00 for the two additional anesthesiologists required under COA six. Staff estimates are based on FY 05 salaries currently seen in the San Antonio area.

Table 7

Staffing Requirements for COA 5 and 6: Fifth Floor

Positions	Staff Required (COA 5)	Staff Required (COA 5)
Anesthesiologist	1	3
Operating Room Nurse	6	6
Operating Room Technician	8	8
Operating Room Scheduler	1	1
Recovery Room Nurse	7	7
Licensed Practical Nurse	4	4
PACU Administrative Clerk	1	1
Nurse Anesthesia Provider	6	6

The information researched in this step was the foundation for the personnel worksheet for the BCA template in step six. Although the estimate for staff may have appeared to be excessive, the total number determined by the PAT was lower than that required using ASAM. In addition, within the health care area, labor is routinely one of the highest costs of a health care organization. Furthermore, select members of the PAT recommended an OIC and NCOIC be appointed for BAMC's SDS Center. For BAMC to achieve the goal of reducing turnover times by 50%, among other optimization efforts in the future, a "go-to" person must be identified and made responsible for the Center, instead of maintaining the disjointed efforts BAMC has adopted. Currently, Surgery Service is responsible for scheduling and Nursing is responsible for nursing staff. This has created inefficiencies in BAMC's operating system. Many times an MTF has various staff members work under different chains of command. For example,

nursing would work under the Department of Nursing and physicians would work under the Department of Surgery. In some instances this may be beneficial. However, many believe that this is not the preferred system for a surgery center. Therefore, this researcher recommended that active duty members within the organization be appointed to fulfill the OIC and NCOIC roles.

Step Five: Location, Layout, and Estimated Cost for each Course of Action

Each COA has a proposed location and internal design based on the current facility design and the DoD Space Planning Criteria. The PAT toured two same day surgery centers to learn about the most efficient layout. The first step in evaluating a feasible location for same day surgery was to evaluate existing space within BAMC with the facility manager and members of the PAT. The PAT was able to identify potential opportunities within BAMC as a COA. In most cases a floor plan was designed which pictorially demonstrated each proposal, while construction costs were identified for each COA.

The first alternative was to maintain the status quo and continue to perform same day surgery and inpatient surgery on the second floor. This area had twelve operating rooms, with no particular division between each of the operating rooms except for the one dedicated for trauma cases. Other than that, surgeries were scheduled based on the surgical service performing the surgery, rather than whether the case was same day or inpatient. The physical layout is show in Appendix R and the flow of traffic is depicted by the arrow. This COA offered a reception area for patients who were checking in for same day surgery. Vital signs were taken and last minute lab work was performed. The patient dressing rooms were just a few feet from the reception area. Here, patients were

able to change and place their personal belongs into a locker. The patient then waited in a small makeshift waiting room before being placed on a gurney in preparation for surgery. The wait time here averaged 30 minutes, but could last as long as one hour. Once the patient was placed on a gurney, located a few yards behind the waiting room, the patient was prepared for surgery and met the anesthesiologist or the nurse anesthesia provider. Patients waited here until an operating room was available. At the time, there were no statistics on waiting time. Once the operating room was available, the patient was wheeled to one of the eleven operating rooms. There were three divided areas: Core A handled orthopedics and general surgical cases, Core B handled all heart, OB/GYN, and general surgeries, and Core C handled all ophthalmology, otolaryngology, urology, and gynecology surgical cases. For example, one surgeon maybe finishing a three-hour inpatient case and the next surgeon would be arriving to perform an hour long, same day surgery case. On average, the organization took about 27 minutes for turnover between same day surgery cases and 31.1 minutes between inpatient surgeries. Once the surgery was completed, the patient was brought to Phase I for recovery that lasts approximately one hour, followed by Phase II recovery. The same day patient was discharged after Phase II. Patients who required additional time prior to being released and but were not considered an inpatient procedure were not admitted. Rather, they were brought to 2 West or 2 South until they were ready to go home. The physical layout appeared to be user friendly for the staff. There were some dead areas or excessive space not being used as additional operating room space, which, if used, might benefit BAMC. In addition, the space did not allow for expansion,

therefore, there were no construction costs associated with this COA. This COA was simply continuing business as usual.

The second alternative is to build a freestanding same day surgery center. This is the most expensive COA, but provides the greatest flexibility, the ability to expand, and an optimum layout. According to the Chief of Logistics, LTC Jim Riley, BAMC proper does not have the physical space to accommodate this facility. Therefore, a site on Fort Sam Houston or private property would have to be identified for this building. Since BAMC would have this facility built, the ability to accommodate seven operating rooms was feasible and recommended by this researcher. The facility would be approximately 73,936 gross square feet. The breakdown by room is provided in Appendix S. The layout would meet the needs of both the staff and BAMC patients and would allow additional space for provider and administrative offices. This is both an advantage and a requirement since the building cannot be built in close proximity to BAMC. Due to the inability to provide a pictorial layout for this COA, the flow of patient care is depicted as follows and would be similar to the private surgery center:

Arrival to the surgery center

An administrative clerk checks in the patient approximately one hour prior to surgery. HIPPA approved individual cubicles are provided for patient comfort. There is also a waiting room with latrines where the patient may sit until called and the family may wait until the surgery is completed. At this stage, insurance forms or other required documentation are completed.

Preparation and Staging Area

The patient is brought to one of the exam rooms, if required. This would depend on the surgeon's preference, the case being performed, or by a patient request.

The patient is brought back to the changing area, which is in an open room, but partitioned off by curtains. Patients place their personal belongings under their gurney's since they would remain on this throughout the process. Toilets are also available in this area for patient use.

The patient is prepared preoperatively for surgery.
Required medications and intravenous fluids are started.

Patient is transferred from the gurney to an operating room table.
Anesthesia is provided at this time.

Operating Rooms

There would be seven operating rooms configured in the most optimum way with ergonomic considerations addressed. Appropriate level of medical supplies and medical equipment is available. Surgical sinks are outside the operating room.

Recovery Area

Once the surgery is completed, a staff member will bring the patient to Phase I of recovery, a few distance from the operating rooms. Phase I and Phase II would be collocated to allow nursing staff to cover both locations. Phase I will have seven recovery bays and Phase II will have fourteen recovery bays. This meets the DoD Space Planning Criteria and ensures that a bottleneck in the recovery room does not occur. Thus the requirement is met for two Phase II bays for every one operating room.

Once a patient is able to move from Phase I to Phase II, the patient is removed from the gurney and placed into a reclining chair. Patients remain in a recovery room chair until the patient is administratively discharged. Once the patient is ready for discharge, the patient will change back into their cloths. Discharge medications and instructions would be provided by the Phase II staff.

Follow-up Care

Follow up care by the surgeon is provided in the appropriate surgery clinic at BAMC. The patient would not return to the same day surgery center for this care.

The facility would also have other administrative and required space per DoD Space Planning Criteria. There would be offices available for the nursing and physician staff. In addition, there would be a staff lounge and locker rooms since the nursing and administrative staff would be assigned to this facility. Based on the requirements identified under the Space Planning Criteria, a same day surgery center with seven operating rooms would cost a total of $34,380,008 (see Appendix S). This includes a 10% design fee based on the construction cost of $22,180,650.00, which results in an estimated design fee of $2,218,065.00. (Personal Communication, Ms. M. Pauli,

January 10, 2005). In addition, 10% of the construction cost is attributed to communication equipment/services, resulting in an estimated cost of $2,218,065.00, 20% of the construction cost would be spent to outfit the clinic with medical/nonmedical equipment and furniture, resulting in an estimated cost of $4,436,130.00. Finally, 15% of the construction cost could be attributed for displacement expenses such as moving equipment to the new facility, totaling $3,327,098.00 for this project.

The third alternative, partition Core C, was one of the most economical COAs, but presented challenges. By partitioning an area dedicated solely to ambulatory surgery, the surgery team was able to organize and modify processes allowing for better utilization of resources and decrease turnover time. However, one Core, which was composed of four operating rooms would not facilitate the same day surgery workload. As addressed in step four, ambulatory surgery required at least five operating rooms to accommodate current workload prior to optimizing. Once the performance based contract was instituted, these same five operating rooms could handle all the forecasted and an additional 746 cases. These additional cases could be either from the backlog or network, whichever the commander deemed to be more appropriate. This researcher recommended that for this COA, the layout would include Core C plus one operating room within Core B. Following Appendix T for the layout and flow, patients would continue to arrive at the same day surgery unit and process up to the operating rooms as discussed for alternative one. Once the patient moves to an operating room, he/she would be taken to Core C. Room number 235-3 seemed to be the most feasible as the fifth room dedicated to ambulatory surgery. This operating room was on the corner of Core B right behind Core C and is one of the smaller rooms. This would

enable dedicated staff members to move more easily between Core C and this room. Once surgery was completed, the patient would move to Phase I, and Phase II as before. Although not the most efficient, this proposed location and internal design would provide easy access for patients and streamline patient flow through a centralized location. Another benefit would be the ease of access for the surgeons. Unlike a stand-alone facility where surgeons are required to drive from the hospital to the surgery center, in this case, surgeons could perform an operation on the second floor and then walk to their offices located nearby. One challenge this alternative presents is the ability to keep inpatient and ambulatory surgery patients separate. As noted by Ms. Elaine Morris and her staff, same day surgery is different from inpatient surgery. Surgeons and staff members working in an ambulatory environment understand the need to decrease turnover and surgery time that is not routinely acknowledge by staff providing inpatient surgery. The question remains, would the staff dedicated to same day surgery be able to achieve the surgery and turnover times that may be more achievable given a layout and design dedicated specifically to this type of surgery? This researcher speculated that this is not possible. There were no construction costs associated with this alternative.

The fourth alternative was to lease a freestanding ambulatory surgery center, which provided for optimal layout and design. Although this researcher was unable to provide a specific layout since leasing meant that BAMC would sign a contract with a privately owned surgery center, the PAT made visits to two local facilities and saw similar layouts. North Central Surgery Center and Health South are two new facilities that were designed specifically with a layout that facilitated optimization. The ability to

expand operations was maximized and only required a modification to an existing contract between BAMC and one of the surgery centers. Since both facilities were only two years old, most of the equipment is manufactured to maximize ease for human use. Patient access and the flow of patient care is maximized by using space efficiently. There were no construction fees associated with this alternative because the facilities were leased. However, leasing with a private facility would have incurred a fee. This researcher received an estimate from Health South, which is located in the Northeast San Antonio area near University Hospital. The leasing fee was $1500.00 per an hour. This amount includes medical and nonmedical staff, preoperative and postoperative areas, operating time, and standard medications provided to patients once surgery is completed. Additional leasing costs are discussed in step six of the business case analysis.

The last two alternatives involve converting the fifth floor labor and delivery unit, which currently has two operating rooms. The only difference between each of the COAs was the patient mix. In COA six, those patients over 65 years of age requiring ambulatory surgery would be provided care outside of BAMC. Following the fifth floor layout (provided in Appendix U), a patient would arrive at the same day surgery center and be greeted by a medical clerk in the reception area. Five individual exam rooms were also located within this area for vital signs and last minute lab work. Patients would either undress in this area or a dressing room could be constructed. Patients would be able to change from their street cloths and place their personal belongs into a locker. Then, they would be placed on gurneys in a large room partitioned by curtains. This is the model suggested by North Central Methodist Hospital. There the patients are also

prepared for surgery and are met by the anesthesiologists or the nurse anesthesia providers. Patients would remain here until an operating room is available. The patients would be wheeled into one of the six available operating rooms. The rooms would be collocated with scrub areas outside of each operating room. Once the surgery is completed, the patient would be brought to Phase I followed by Phase II recovery. Upon discharge, patients would be provided appropriate medication. Patients requiring additional recovery time would be brought to the old Phase II recovery area, which is currently being considered by the BAMC chain of command for a 23 recovery area. Construction costs would exceed $4,000,000.00, which does not include the displacement costs of the Uniform Business Office nor the Multi-Discipline Clinic. The physical layout provided easy patient access and streamlined the patient flow by centralizing the entire process. This alternative provided a clearly defined location for ambulatory surgery and the ability to work towards a reduction in turnover and surgery times.

Step Six – Business Case Analysis

The sixth step of the methodology was the business case analysis. Each alternative was analyzed using this tool. This enabled this researcher to ascertain the costs for each scenario. Prior to reviewing each COA, there are some basic premises were applied to each alternative. For example, the Change in Workload worksheet provides the number of ambulatory surgical cases each COA could recapture from the network and the number of cases a facility avoided shifting to the network, if the organization was capable of performing the work. For each COA, recapture from the network was the number of surgical cases in FY 04 attributed to active duty, prime to

BAMC (patients who have a BAMC provider by name), and prime to the network (patients who have a provider by name in the private sector) (see Appendix B) performed in the private sector. The amount of direct care workload varied for each COA. Backlog cases were the number of cases that BAMC could avoid shifting to the Network, if the organization has the ability to perform these cases. The data were presented in step one and are found in Appendix B. The personnel estimates worksheet utilized the information from step four and individually listed each staff member hired, the associated costs, and the total staffing cost for that COA. Since each COA had varied staffing requirements, this cost varied by alternative.

The third worksheet provided the change in marginal supply costs, which were the supply costs associated with performing one additional ambulatory surgery case. Data were procured from the MEPRS system. The average marginal supply cost for an additional ambulatory surgery case was estimated to be $1,096.12 (see Appendix V). This supply cost was estimated based on FY 04 ambulatory expenses and workload and included the supplies used in the following areas; ambulatory/same day surgery center (also referred to as the reception area), anesthesia, operating room, and the recovery area. To calculate this figure, this researcher identified what percent of the total expenses for that MEPRS code was directly attributable to ambulatory surgery. For DGAA, (Ambulatory Care Unit) $2,539.80 was directly related to ambulatory surgery. However, DFAA (Anesthesia), DFBA (Operating Room), and DFCA (PACU) included supply dollars that are attributed to inpatient and outpatient surgery cases. Since this information was not differentiated between the two types of cases, this researcher calculated a percent of the total expenses attributed to each of these three MEPRS

codes according to the weights associated with the workload. For anesthesia, 26.81% of the total weight attributed was directly related to anesthesia provided for outpatient surgery. One of the limitations noted is that, if an anesthesia provider performed care at an outpatient clinic other than an operating room, this is figured into this percentage. This researcher was unable to break this number out any further. Based on this figure, of the $754,162.90 total supply costs spent in FY2004 for anesthesia, $202,191.07 was directly related to outpatient surgery cases (see Appendix V). For the operating room, the same methodology applied and the weighted average was 27.42%, which accounted for $3,362,955.44 out of the total operating budget of $13,249,290.44 (see Appendix V). The PACUs weighted average was 36.39%, which accounted for $30,318.28 out of a budget of $83,314.86 (see Appendix V). Next, this researcher calculated each of the supply costs for each of the four areas using the total visits associated with the weights, which was taken from MEPRS. This provided a per case supply cost for each area of $.36 for the ambulatory unit, $57.12 for anesthesia, $1,026.36 for the operating room, and $12.29 for the PACU (see Appendix V). Summing of these figures results in a marginal supply cost of $1,096.12 and it is the value utilized in the change in marginal supply costs. It is important to note that as seen in Appendix V, this researcher initially identified the marginal supply cost for 10 out of the 11 surgical areas (Oral Surgery was omitted). After calculating the weighted average used to identify the expenses attributed to ambulatory surgery in each of the four areas that were discussed above, the same methodology was used to identify the supply cost for each service. Using the weighted average for each surgical service out of the total weighted average for ambulatory surgery, a percent was attributed to each

service. This percent was then multiplied by the total expense for ambulatory surgery. This provided the FY 04 supply costs for each of the individual services. Using the workload found in MEPRS and comparing this to OPLOG, the supply cost for that service was divided by the associated workload. This resulted in the average supply cost for each service under Anesthesia, Operating Room, and the PACU (see Appendix V). After conferring with an analyst and the AO for the DoS, this researcher concluded that the supply cost using this second method was high and the average marginal supply cost was more representative.

The next worksheet is called Change in Capital Cost (Equipment) which includes medical and nonmedical equipment necessary for each scenario. Three of the six scenarios maintain the status quo, partition a core area plus one operating room, and lease a facility, did not utilize this worksheet since additional equipment was not required for those alternatives. Conversely, two of the six, which involved converting the fifth floor with over 65 patients, and without over 65 patients would require the same amount of equipment (see Appendix W). In order to identify necessary equipment, the researcher conferred with the staff from the Operating Room, PACU, Informatics, CMS, and Logistics. For the stand-alone facility, this researcher attempted to identify the equipment necessary for this COA, but it proved to be difficult. In addition, if BAMC decides to request MILCON funding, then the planning factor of 20% will be assessed for the estimated equipment expense. Therefore, this researcher utilized the 20% planning factor.

Change in Capital Costs (Facility Modifications), involved BAMC's facility manager and the DoD Space Planning Criteria. Only renovation of the fifth floor and

constructing a freestanding facility would incur facility modification costs. In addition to construction costs, displacement expense were also included in this analysis. This cost was associated with the expense of moving a department that is occupying the area under consideration at the time of the study.

Capital Cost (Lease and Contacts) only applied to COA four, leasing an ambulatory center. Therefore, this spreadsheet will not be found in the other scenarios. This information was obtained from work with two of the local surgery centers and is only an estimate. If the organization decides this is the most viable option, additional work will be required to ascertain the exact cost, which in turn would be written into a contract between the Surgery Center and BAMC.

The Change in Third Party Collections worksheet pertains to the amount of money the facility would bring back into BAMC based on the direct care workload identified in the first spreadsheet. The per unit dollar figure estimate was the same for each COA and was obtained from M2. The average outpatient third party collection using FY2004 figures was $1,498.32. This figure included professional and institutional fees. However, BAMC could not reasonably expect to bring in that amount of money for each visit. Understandably, many beneficiaries who receive care in the military health system allow their private insurance to lapse (Mr. C. Ballard, personal communication, January 15, 205). Since some patients have other health insurance (OHI) (and of those who do have OHI, 100% is not collected), there are planning factors associated with this step. For planning purposes, MEDCOM estimates that only 10% of their patients have OHI. Of those patients, only 60% of the amount billed for their care is collected. These

planning factors are automatically incorporated into this section of the worksheet and the third party estimates addressed in each COA included this planning factor.

The next worksheet addresses the dollar amount attributed to savings from recapturing and avoiding workload from going to the Network. This sheet is directly related to the Change in Workload in the MTF and the visits attributed to workload shift (workload that will move to the Network if the venture is initiated) and recapture (new workload based on the venture). These visits were multiplied by the Champus Maximum Allowable Charge (CMAC) which was $1,498.32. The CMAC rate covered professional and institutional fees. The average professional CMAC fee for ambulatory surgery based on FY 04 ambulatory cases pulled from M2 was $679.14. The average institutional component was $819.18. This was derived from a memorandum dated September 14, 2004, that was signed by the Acting Deputy Assistant Secretary of Defense.

The final worksheet, which is actually the top worksheet of the packet, is the culmination of the BCA called the Performance and Financial Summary. This final sheet provided a synopsis of the entire project in addition to the 36-month ROI. This ROI was based on the expenses (personnel, equipment, facility modifications, and supplies associated within workload) and the savings, cost avoidance, and third party collections attributed to the direct care workload. The 36-month ROI for each scenario was utilized in the final step, the Decision Matrix. Based on the information provided, the following discussion addresses each of the six alternatives.

The first COA, did not include a financial analysis since there was not an increase in the workload. The second COA, was understandably the most expensive

and had the lowest ROI. Following Appendix X, the 36-month ROI, as noted on the Performance and Final Summary worksheet, was a negative $41,961,300.00. The outflow was $55,740,700.00 and the inflow was $13,961,300 (see Appendix X). As discussed above, the ability to build a freestanding facility enabled BAMC to recapture 1,429 ambulatory surgery cases from the network and handle 100% of the backlog or 746 surgical cases. This equated to 2,169 additional ambulatory surgical cases (see Appendix X). To perform these cases plus the existing cases forecasted in step two, BAMC would need to contract for 46 personnel at a cost of $2,962,956.00 as discussed in step four (see Appendix X). Herein lies a limitation of this study. When calculating the staff, only the additional staff members required to perform the additional work were theoretically included in this worksheet. However, if ambulatory surgery cases were moved from the main operating room, inpatient cases would increase, so the staff would either remain in this area or BAMC would hire additional staff members. If this BCA was accomplished to standard, this researcher would assess the increase in inpatient cases as a cost savings or cost avoidance to defray the expense of purchasing additional staff. Marginal cost of $1,096.00 were multiplied by the increase in MTF workload of 2,169 visits. This resulted in a supply cost of $2,377,224.00 to handle the additional cases (see Appendix X). Change in Capital Cost – Equipment was discussed in step four and included the cost of outfitting a new facility with medical and non-medical equipment, totaling $4,436,130.00 and the communication equipment which was $2,218,065.00 (see Appendix X). Facility modifications were the most expensive, totaling $27,725,813.00, which included the building costs ($22,180,650.00), the design fee ($2,218,065.00), and a displacement cost ($3,327,098.00) (see Appendix X). Third

party collection, the first inflow of money, was the result of multiplying 2,169 additional visits by the CHAMPUS Maximum Allowable Charge (CMAC) rate of $1,498.32, and then multiplying this figure by 10% and 60%. This resulted in an inflow of $194,991.00 (see Appendix X). The final worksheet demonstrated the amount of money recaptured by bring the additional 1,423 visits back to the MTF and the amount of money the MTF avoided from leaving the facility because of its ability to perform the 746 ambulatory surgical cases. In the first year, BAMC will recapture $2,132,109 and avoid $1,117,747.00 worth of medical care from moving to the Network. In subsequent years, BAMC will avoid $3,249,856.00 of ambulatory surgery care from moving to the network (see Appendix X). Although totals for the first year equal subsequent years, it is important to break out what is avoided and what is recaptured. After year one, the 1,423 visits that are recaptured become avoided since theoretically the facility is now performing these cases in house as opposed to bringing them from the network.

The third COA, had a positive ROI. The 36-month ROI as noted on the Performance and Final Summary Worksheet is $1,055,200.00 (see Appendix Y). The outflow of $3,684,100.00 was attributed to an increase of staff and marginal supply costs. The inflow of $4,739,200.00 was attributed to recapture, cost avoidance, and third party collections. The ability to use Core C plus one additional operating room allowed the organization to recapture 746 ambulatory surgery cases from either the network or focus on the facilities backlog cases (see Appendix Y). It is important to note that the ability of the organization to perform these additional surgeries depends on their ability to decrease turnover times. If the facility is unable to attain this goal, the number of visits will decrease as will the ROI. In order to accommodate these cases, BAMC

would need to contract for two additional personnel at a cost of $103,402.00, which is discussed in step four (see Appendix Y). The marginal cost of $1,096.00 was multiplied by the increase in MTF workload of 746 visits. This resulted in a supply cost of $817,616.00 in order to handle the additional cases (see Appendix Y). For this alternative, there were no requirements to purchase additional equipment or to modify the existing facility; these worksheets were deleted. Third party collection was calculated exactly as above and resulted in an inflow of $67,065.00 (see Appendix Y). The last worksheet showed that because of the additional 746 visits recaptured in the first year by the MTF, BAMC will recapture $1,117,747.00. Subsequent years, BAMC will avoid $1,117,747.00 from moving to the network (see Appendix Y).

The fourth COA has a 36-month ROI of negative $7,000,600.00, which can be found in the Performance and Final Summary Worksheet (see Appendix Z). The outflow was $20,780,00.00 and the inflow was $13,779,400.00. Following the applicable worksheets, the ability to lease a facility with six operating rooms enabled BAMC to perform 2,169 additional surgical cases as in option two. However, since the City of San Antonio requires the presence of anesthesiologists during surgery which cost at least $320,000.00 per provider as opposed to using nurse anesthetists as seen in the MTF, BAMC would need to purchase six providers at a total cost of $1,920,000.00 (see Appendix Z). There was no marginal cost for this endeavor since the leased facility would provide all the necessary supplies and the medication when a patient is discharged. Similarly, there were no requirements to purchase additional equipment or to modify the existing facility. However, BAMC would have to pay at least $1,500.00 per an hour to lease the surgical center. As show in Appendix Z, BAMC would pay

$3,240,000.00 annually. This was calculated by taking the $1,500.00 per hour times nine hours (planning factor of 0700 – 1700 hrs operational, with one hour for lunch) times 240 days (Personal communication, Mr. K. Martin, February 10, 2005). Third party collection was calculated exactly as above and resulted in the inflow of $194,991.00 (see Appendix Z). The last worksheet showed that of the additional 746 visits recaptured for the first year back into the MTF, BAMC would recapture $1,117,747.00. In subsequent years, BAMC will avoid $1,117,747.00 from moving to the network (see Appendix Y). Similar to the second COA, the amount of money recaptured by bringing in an additional 1,423 visits to the MTF and the amount of money the MTF avoids from leaving the facility because of its ability to perform the 746 ambulatory surgical cases, was significant. The first year, BAMC will recapture $2,132,109 and avoid $1,117,747.00 from moving to the network. In subsequent years, BAMC will avoid $3,249,856.00 from moving to the network (see Appendix Z).

The fifth COA had a negative ROI due to the construction and staffing requirements. In fact, the yearly staffing expense was over $2.4 million compared to the $2.1 million BAMC will recapture per year. Once you incorporate the marginal supply costs and the construction requirements, this alternative will continue to have a negative ROI. The 36-month ROI as noted on the Performance and Final Summary Worksheet was negative $15,928,000.00 (see Appendix AA). The outflow was $24,968,600.00 and the inflow was $9,040,100.00. The ability to utilize space within BAMC, enabled the organization to utilize six operating rooms, thereby recapturing 1,423 surgical cases from the network. In this scenario, BAMC was prohibited from handling the backlog. The commander may decide that the ability to reduce the backlog is more important than

bringing the cases from the network, but the assumption for this step is that BAMC would focus on the network. In order to accommodate these cases plus the existing cases forecasted in step two, BAMC would need to contract for 36 personnel at a cost of $2,464,297.00 as proposed in step four (see Appendix AA). The same limitation discussed for COA 2 exits here. Ambulatory surgery cases would be moved from the main operating room to the fifth floor, enabling BAMC to increase its inpatient surgical cases. Therefore, financial savings attributed to recapturing and reducing inpatient surgical cases would be included if this BCA was accomplished to standard. The other option was to include only the staff positions necessary to perform the additional ambulatory surgical cases as opposed to identifying all of the staff members necessary to run the six operating rooms. However, the PAT wanted to ensure that a performance-based contract under one organization was included in assessing each scenario. The marginal cost of $1,096.00 was multiplied by an increase in MTF workload of 1,423 visits. This resulted in a supply cost of $1,559,608.00 to handle the additional surgical cases (see Appendix AA). Change in Capital Cost – Equipment was discussed in step four and included the cost of outfitting a new facility with equipment, which totaled $4,200,487.00 (see Appendix AA). Facility modifications were high in this area due to the expense of constructing four operating rooms and the displacement expenses attributed to moving the Uniform Business Office and the Multi-Discipline Clinic. The total cost was $4,658,000.00 and included a displacement cost of UBO for $5,000.00 and Multi-Discipline Clinic for $3,000.00 (see Appendix AA). Additional expenses in this area included the facility modifications required to build an area for UBO, which would total of $650,000.00. Third party collection resulted in an inflow of $127,927.00 (see

Appendix AA). The final worksheet demonstrated the amount of money recaptured by bringing an additional 1,423 visits back to the MTF. BAMC will recapture $2,132,109.00 the first year and avoid this same amount in subsequent years from moving to the network (see Appendix AA).

The final COA enables BAMC to handle 1,423 Network and 746 backlog cases. This COA was calculated in two ways: 1) sending over 65 patients to the network and 2) having BAMC physicians perform the over 65 cases in a private facility. The first BCA had similar expenses to the previous alternative, minus the total marginal supply costs. Since this entailed the same space, the personnel, equipment, and facility modifications were the same as the previous alternative. In this scenario, the 36-month ROI was negative $14,459,300.00 (see Appendix BB) with an outflow of $28,238,600.00 and an inflow of $13,779,400.00. Compared to the previous COA, this alternative enabled the organization to perform an additional 2,169 surgical cases with a supply cost of $2,377,224.00 (see Appendix BB). Since BAMC is able to perform additional cases compared to the previous scenario, third party collections would increase and would total $194,991.00, an increase of $67,069.00 from the alternative above (see Appendix BB). The final worksheet demonstrated the amount of money recaptured by bringing the additional 1,423 surgical cases back to the MTF and avoiding 746 surgical cases having to move to the network. This savings would total $3,249,856.00 for years 1- 3 (see Appendix BB).

This COA denoted that over 65 ambulatory surgical cases are performed in a private surgical center. Since GME considerations at BAMC are an important factor, BAMCs physicians have opted to continue to perform these cases. Thus, another

financial assessment was made and incorporated into the existing BCA (see Appendix CC). The only addition to the new BCA was two anesthesiologists. Since the private sector only allowed anesthesiologists to practice in their operating rooms, BAMC would require additional staffing in order to continuing performing at a minimum FY 04 level of ambulatory surgical cases for the over 65 population. To continuing performing the 1,781 over 65 cases seen in FY 04, BAMC would need two operating rooms dedicated per week. Since the private organization would provide the same level of support addressed in the leasing option, BAMC would only need to procure two additional anesthesiologists. This would increase its personnel expenses by $640,000.00 for a total of $3,104,297.00. In turn, the ROI would become a negative $17,019,300.00 compared to a negative $14,459,300.00, which would be an increase of $2,560,000.00 (see Appendix CC). Although this is an expensive alternative, the leasing cost of $1,500.00 is not required under this scenario. According to Ms. Morris, her organization would bill MEDICARE instead of billing BAMC as is seen in the leasing option. BAMC would be taken out of the billing process. A Memorandum of Understanding would be written between BAMC and the Surgical Center that would address this billing proposal, among others. In addition, the surgical center would bill based on the Medicare payment rates found in Appendix 4 and discussed in the literature review. One of the major concerns under this alternative is workload credit. If the surgical case is not performed at BAMC, the institution is unable to receive workload credit for these cases. Since over 65 patients historically have a higher level of acuity, BAMCs RVUs would theoretically decrease from previous years. The leadership must discuss this important factor.

Although four of the six COAs provided a negative ROI, this was only one aspect of considering the best alternative for the same day surgery center. In addition, BAMC may consider funding construction and equipment expenses under a MILCON project. In this scenario, BAMC would request funding through MEDCOM as opposed to submitting a BCA to MEDCOM for the construction and equipment expenses. The BCA would then only entail staff and marginal supply costs. In turn, the ROI would inevitably increase to a more manageable number. For example, if COA 5 was the alternative of choice and the construction and equipment costs were procured via a MILCON project, the ROI would be negative $10,552,600 for a savings of $2,798,300.00. If BAMC decided to construct a stand-alone surgery center, a MILCON project would realistically be the only way to proceed. In this case, the ROI would be a negative $10,918,100.00 compared to $41,961,300.00. Furthermore, if BAMC proceeds with a BCA, the staffing levels must be reassessed and only include the staff necessary to handle additional cases.

In conclusion, the best financial alternative is COA 3, partition Core C plus one operating room. Table 8 provides a summary of each alternative with its associated ROI. The stand-alone Surgical Center and the fifth floor options would benefit from a MILCON project.

Table 8

Return on Investment for each COA

COA	Project	36-Month ROI	MILCON ROI
COA 3	Partition Core C	$1,055,200	Non applicable
COA 1	Status Quo	$0	Non applicable
COA 4	Lease	-$7,416,600	Non applicable
COA 6(a)	5th Floor, >65 Network	-$14,459,300	-$5,586,700
COA 5	5th Floor	-$15,928,000	-$10,552,600
COA 6(b)	5th Floor, >65 Private	-$17,019,300	-$8,146,700
COA 2	Standalone	-$41,961,300	-$10,918,100

Step 7: Decision Matrix

The last step was to employ the Decision Matrix in order to ascertain the best courses of action for BAMC. Six alternatives were analyzed to suggest how BAMC could best provide ambulatory surgery. Each alternative was based on recommendations from BAMC's Commander and the PAT. The intent was to evaluate each COA with a decision-making matrix and compare the results of the scores. Each COA was assigned a score based on the assigned weights for each area analyzed.

Ability to expand - the potential for ambulatory surgery expansion given an increase in workload in the future and current structural limitations (5- 10 years from implementation).

Displacement effect – The intangible impact such as worker satisfaction of displacing other services in order to create an ambulatory surgery center. Financial impacts are accounted for in the return on investment.

Financial Return on Investment –The financial analysis of each COA using the Business Case Analysis. This criterion is based on costs to implement (i.e. salaries, supplies, medical equipment, non-medical equipment, displacement of

other services, etc.) and savings attributed to recapturing ambulatory surgery cases from the network. This does not include intangible benefits such as continuity of care, quality of life for the patient and staff members, etc.

Graduate Management Requirements (GME) – The ability to continue to provide GME.

Layout of the ambulatory surgery area – The internal flow of patients and staff through the ambulatory surgery process beginning with admission through discharge from the Phase II recovery area.

Location – The location where the ambulatory surgery is performed. Note: the DoD Space Planning Criteria recommends inpatient and ambulatory surgery services should be co-located in order to encourage maximum utilization of resources.

Most surgeries performed – the greatest number of surgeries performed given structural limitations (this is based on calculations IAW DoD Space Planning Criteria).

Time to implement– the amount of time in months to implement each course of action.

The criteria were selected based on recommendations from the PAT and the literature review. In addition to the criteria, weights were assigned to each. This was accomplished by the use of a questionnaire from 13 of BAMCs key leaders. The questionnaire explained the process and operationally defined each variable. Each member ranked the variables in order of importance based on his/her professional opinion and experience. A ranking of one (1) was designated as the lowest level of importance while a ranking of eight (8) was considered the highest level of importance. Based on the questionnaire, the following weights were assigned and are listed in order of importance:

Most surgeries performed: 4
Layout: 3.85
Location: 3.85
Ability to expand: 3.69

Graduate management education: 3.62
Financial ROI: 3.23
Time to implement: 3
Displacement effect: 2.46

Each of the 13 members then ranked each COA based on 4 of the 8 criteria. Although there are eight criteria, four of the criteria rankings were determined based on objective data calculated in one of the six steps above. These include ability to expand, financial ROI, most surgeries performed, and time to implement. The rankings were completed in ascending order such that the COA with the lowest value for a criterion received the lowest numerical rank of one. The COA with the highest value for a criterion received the highest numerical value of six. The ranks were then multiplied by the criterion's associated weight. The result was the weighted value for that criterion. By adding the weighted value of each criterion for each COA, an overall rank was achieved. The COA with the highest score was the recommended COA for BAMC's ambulatory surgery program. Table 9 displays the decision making model used to rank and produce a final recommendation for BAMC.

Table 9

Decision Making Matrix

Decision Making Matrix																	
	Expand	Weighted Value (3.69)	Displace	Weighted Value (2.46)	ROI	Weighted Value (3.23)	GME	Weighted Value (3.62)	Layout	Weighted Value (3.85)	Location	Weighted Value (3.85)	Most Surgeries	Weighted Value (4.00)	Time	Weighted Value (3.00)	Overall Rank
COA#1	3	11.07	4.4	10.82	5	16.15	4.1	14.84	2.9	11.17	3.8	14.63	1	4	6	18	100.68
COA#2	5	18.45	4.4	10.82	1	3.23	4.5	16.29	5.4	20.79	3.6	13.86	5	20	2	6	109.44
COA#3	3	11.07	3.3	8.12	6	19.38	3.9	14.12	3.3	12.71	4.5	17.33	2	8	5	15	105.72
COA#4	6	22.14	4.2	10.33	1	3.23	3.4	12.31	4	15.40	2.6	10.01	6	24	4	12	109.42
COA#5	4	14.76	2.5	6.15	4	12.92	4.1	14.84	4	15.40	4.5	17.33	3	12	3	9	102.40
COA#6	4	14.76	2.2	5.41	3	9.69	1.1	3.98	2.5	9.63	2.4	9.24	4	16	3	9	77.71

After applying each COA to the decision-making matrix, building a free standing ambulatory surgery center (COA 2) emerged as the best solution by which BAMC could provide ambulatory surgery services; it received the highest score of 109.44. COA 4 was second with a score of 109.42, and was followed by COA 3 (with a score of

105.72). COA 5 had a score of 102.4, while COA 1 trailed with a score of 100.68, and lastly, COA 6 was at the bottom with a score of 77.71.

Discussion

It is important to enumerate the advantages and disadvantages of each COA, in order of ranking, as determined by the decision-making process. Although the process recommended COA 2, the BAMC Commander could provide additional input causing a different COA to emerge. In addition, by modifying the weight of each criterion, a different recommendation might have emerged. Furthermore, there was a little variability between COA 2 and 4, so either option could be recommended.

By building a free standing facility, BAMC is able to recapture 1,423 surgical cases and perform all 746 backlogged cases. Although this option is the most expensive of all of the alternatives, since it entails large construction and staffing costs, it provides the ability to enhance surgical processing because all ambulatory cases would be performed under one roof with dedicated staff. One may theoretically estimate that turnover and surgery times would continue to decrease in the future, which would enable BAMC to increase its surgical volume. Research shows that facilities that perform ambulatory and inpatient surgery separately adapt a culture or philosophy that is not always possible if these surgical cases are performed in the same operating rooms. In addition, unlike some of the other alternatives, BAMC would not displace other services. The biggest disadvantage, other than the financial outlay of money, is the time it would take to implement. An endeavor such as this would take approximately 10 years.

Leasing a surgery center has many of the same benefits for BAMC as would constructing a free standing facility. Surprisingly, this is not the most expensive option to implement. However, the need to hire an anesthesiologist rather than utilizing a nurse anesthetist reduces the ROI. Although the military system routinely uses nurse anesthesia to perform this function, BAMC's civilian counterparts do not allow them to work in their surgical centers. This option enables the organization to perform the highest number of cases after COAs 2 and 6. Network and backlog cases can be performed and its ability to increase in the future is a possibility. In addition, the physical layout is optimal since the surgical centers the PAT visited were built within the past two years. Although the providers would have to travel to perform their ambulatory surgical cases, other services would not be displaced, as would be the case for the fifth floor option. In addition, the time to implement would be approximately six months. If BAMC decides to select this option, all of the providers who perform ambulatory surgery, to include the anesthesiologists, would have to be credentialed by the private facility; this could take between three to six months. One voiced concern is the need to procure liability insurance for providers. According to Health South, coverage is required prior to physicians performing surgery in their center; North Central does not have the same requirement. The answer is based on the following question, "Who controls the standard of care" (MAJ D. Henry, personal communication, January 27, 2005)? If BAMC is responsible, then liability insurance is not required; if the private surgical center controls the standard of care, liability insurance for every provider is required. This specifically falls under the Federal Employees Liability Reform Compensation Act. According to MAJ David Henry, BAMC's legal representation, the standard of care would fall on

BAMC therefore, liability insurance is not required. This same rule applies for COA 6, which involves performing over age 65 ambulatory surgical cases in a private facility.

Partitioning Core C and providing one additional operating room would result in a positive ROI unlike the other options. BAMC could institute this alternative within three months since the only challenge would be to hire two additional registered nurses. Therefore, "time to implement" would be quicker compared to the other alternatives. Additionally, its location enables ambulatory surgery cases to be performed in the main operating room, which was recommended by the DoD Space Planning Criteria. Other services within BAMC would not be displaced and surgeons accustomed to the current location would adapt more easily to this COA. However, this COA comes with some disadvantages. The physical layout is not optimal compared to the other COAs. A Core surgical suite provides four operating rooms. Analysis shows that five operating rooms are required to perform current workload and the additional 746 backlogged surgical cases providers could perform by reducing turnover times. Although adding one additional operating room may not appear to alter the physical layout significantly, the ability to decrease turnover times is dependent on an efficient layout among other variables. Every additional footstep a staff member must take constitutes an increase in surgery time. If BAMC implements this COA, this researcher recommends that a time in motion study be conducted to determine the true feasibility of reducing turnover times by 50%. Finally, this option does not provide for expansion. The main operating suite is located in the center of the second floor, with outpatient surgical clinics lining the corridor. According to the facility manager, the ability to build additional operating rooms is not feasible.

The option to convert the labor and delivery unit into an ambulatory surgery center requires a large outlay of money in order to build four additional operating rooms. Since workload estimates show that BAMC requires seven rooms, this option does not provide enough operating time to perform all the identified workload. Unfortunately, the facility is structurally constrained and only able to build 4 not 5 operating rooms, thus BAMC will not be able to perform both backlog and network surgical cases. Another disadvantage is the requirement to displace services currently operating in that area. The Uniformed Business Office, Pain Clinic, and the Multi-Discipline Clinic would have to be moved to another area in BAMC, entailing cost and time. A second disadvantage is the location as set forth by the DOD planning criteria. However, the layout is functional compared to options one and three. As estimated by the Chief of Logistics, the time to implement this COA would be at least one year and there are no opportunities for expansion in the future.

Maintaining the statue quo is a solution BAMC may select if the command determines that the benefit of slicing ambulatory surgery out of the main operating room is not negligible or monies are not available. In this case, current operations would remain the same.

The conversation of the labor and deliver unit to a surgery center while performing over age 65 cases in a private facility provides most of the same advantages and disadvantages as option five. The biggest difference is in the number of surgical cases that can be performed. Since over age 65 patients would receive surgery in a private facility, additional network cases for those under 65 would be increased. However, the cost to provide the two anesthesiologists for the cases being performed in

the private sector negatively increases the ROI by over $1 million when compared to option five. Splitting surgical operations between two locations may also be ineffective and present unforeseen challenges. All other advantages remain the same from the previous option.

The process utilized to determine the best option for BAMC to provide ambulatory surgery was proven through an objective decision-making process. Interestingly, I was not particularly partial to one COA over another, yet I did find that the key leaders participating in this process had distinct opinions as to what BAMC should do to provide ambulatory surgery services. In addition, the commander did not participate in the decision making process. If he had, the weights of the criterion might have been different resulting in a different COA.

Recommendation

Based on the findings from the decision-making matrix, I recommend BAMC build a freestanding surgical center or lease a private surgery center. Since the variability between both COAs is less than .01, either option appears to meet BAMC's needs. However, due to the time required to implement either option or if the option is not feasible due to budgetary constraints, a combination of each option is recommended. For example, BAMC could phase in ambulatory surgery in a three-step process. First, the organization could begin by performing all ambulatory surgery cases using Core C plus one operating room. This would enable the staff to identify their strengths and weaknesses and work towards the philosophy of a same day surgery center. Simultaneously, BAMC could collaborate with a private facility within the next year to ensure that an appropriate Memorandum of Understanding is established and

credentialing requirements are completed. BAMC may also decide to begin operations in Core C and, after the administrative requirements are completed, BAMC could perform a percentage of surgical cases in the private facility. While these efforts are in process, BAMC could begin a MILCON request for a same day surgery center. Since this initiative takes approximately 10 years, it is advisable that this process begin as soon as possible. However, by incorporating the other two steps, BAMC would begin the process towards establishing ambulatory surgery as practiced in the private sector.

Conclusion

Establishing an ambulatory surgery center is expensive and time consuming. More importantly, issues such as staffing, equipment procurement, and construction requirements loom large. If, in fact, BAMC decides to implement the recommended COA, this researcher recommends that performance metrics be in place to ensure financial ROI, workload, surgery turnover times and other metrics are defined, clearly understood, and routinely monitored. If performance metrics are not objectively identified initially, monitored, and updated thereafter, the ability for BAMC to accurately assess its performance is neither possible nor practical. In addition, there are many alternatives that were not analyzed that the command may find to be viable. One example is for BAMC to consider joining efforts with Willford Hall to establish one ambulatory surgery center within the SA-MM. This would meet the intent of the Governance Plan and would provide better utilization of assets between both facilities. Although implementing a same day surgery unit requires an inordinate amount of time and work, the ability for BAMC to mirror practices as seen in the civilian sector would benefit the organization in the coming years. As CPT Mary Lyford stated in her GMP,

"the question now facing BAMC is not whether to offer a same day surgery program, but how the program should be developed and managed in order to be the most successful" (pg. 87). Sixteen years later, a similar question is asked: Its not a matter of whether to perform same day surgery separate from inpatient surgery, but how the unit should be developed to be the most successful. Although the construction of a free standing surgery center may not be Commander's choice, BAMC should commit to optimizing the ambulatory surgery process. Once there is an agreement to proceed, members of the PAT should be identified to establish this center. Without the support of key leaders within BAMC and the ability to document process, capture and analyze data, and modify existing operations based on information gathered, the care of ambulatory surgery patients will not be optimized.

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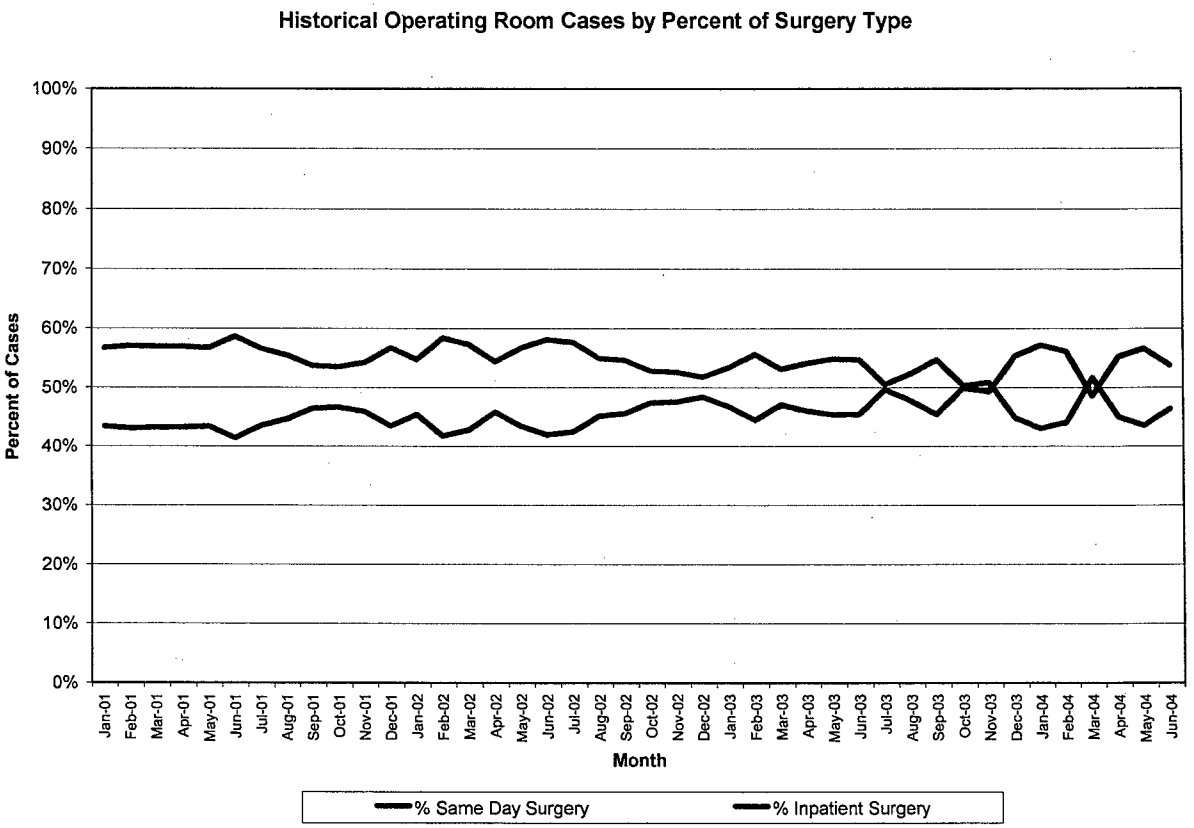
Appendix A

Historical Operating Room Cases: Ambulatory and Inpatient



Source: OPLOG Jan 01 to June 04 inpatient and outpatient surgery cases

Appendix B

FY 2004 Backlog and Network Ambulatory Surgery Workload

Private Sector Outpatient Claims associated with an Ambulatory Surgery Procedure

	Active Duty	Prime to BAMC	Prime to WHMC	Prime to RAFB/BAFB	Prime to other MTF	Prime to Network	Space A < 65	Space A > 65	Total < 65
Amount Paid associated with Private Sector APV procedures	$51,823.33	$426,787.64	$434,908.27	$323,318.70	$9,274.09	$550,669.60	$433,710.14	$1,731,989.96	$2,230,491.77
Number of claims with Private Sector APV procedures	82	755	760	474	17	889	1,751	12,750	17,478

Source: FY 04 M2 private sector outpatient surgery claims

Total Number of Ambulatory Surgical Visits on Backlog by Service

Service	Total Number of Cases on Backlog
General Surgery	112
Gynecology	60
Neurosurgery	16
Ophthalmology	151
Oral-Maxillofacial Surgery	20
Orthopedic Surgery	259
Otolaryngology	33
Plastic Surgery	17
Urology	78
	746

Source: FY 04 OPLOG and clinic registration books

Appendix C

Process Action Team Members

Department	Team Member	Position
DHCO	COL Suzanne Cuda	Chief, DHCO & PAT
DHCO	Mr. Ken Martin	Analyst
DHCO	Mrs. Dawn Rusing	Analyst
DOS	CPT Forest Kim	Administrative Officer
DOS	COL MaryAnn McAfee	Chief, DOS
Logistics	LTC James Riley	Chief, Logistics
Logistics	Mr. Roy Hircak	Facility Manager
Anesthesia Services	LTC David Longenecker	Chief, Anesthesia
Nursing	COL LuAnn Peralta	Peroperative Nursing Services
Nursing	MAJ Patrick Ahearne	Same-day Surgery OIC
Ophthalmology	COL Steven Grimes	Chief, Ophthalmolgy
Orthopedics	COL Mark Bagg	Chief, Orthopedics
Otolaryngology	COL Jeffrey Faulkner	Chief, Otolaryngology
Baylor Resident	MAJ Kimberlee Aiello	Lead Researcher

Source: PAT members chosen by Chief, Department of Healthcare Operations and the researcher

Appendix D

Ambulatory Surgical Centers Medicare Payment Rates

Group	Rate
Group 1	$333.00
Group 2	$446.00
Group 3	$510.00
Group 4	$630.00
Group 5	$717.00
Group 6	$826.00 ($676 + $150 for intraocular lenses)
Group 7	$995.00
Group 8	$973 ($823.00 + $150.00)
Group 9	$1,339

Source: FY 04 Center for Medicaid and Medicare Services Manual

Appendix E

Requirements for Ambulatory Surgery Center

1) Specific Conditions for Coverage include:

a. Governing Body and Management: Assume full legal responsibility for total operations

b. Surgical Services: Physicians must be fully credentialed and approved by the Governing Board

c. Evaluation of Quality: Ongoing Continuous Quality Improvement and Risk Management Programs. Peer Review, Chart Review, Credentialing with primary verification source.

d. Safety: Depending on the state, they may require a separate safety plan with Officer and incidence reporting.

e. Medical Staff: legally and professionally qualified for appointment

f. Nursing Services: RN trained in CPT must be available when a patient is in the unit. Require ACLS within the Recovery Room.

g. Medical Records: Complete, comprehensive and accurate

h. Pharmaceutical Services: DEA license to dispense narcotics

i. Laboratory: CLIA license to perform lab services or a waiver to perform limited tests

j. Radiological Services: must be supervised by a radiologist or a radiation oncology

2) Physical Environment: All ASC are required to meet both Federal and State Fire Safety Codes. It is critical that organizations identify the State requirements prior to

building. The codes pertain specifically to construction type, engineering, electrical, mechanical and storage, monitoring, and the alarm system. The Health Facility Planning Agency would assist BAMC with this and identify the requirements. Examples of regulations include fire resistance/sprinklers, preparation areas, procedure suites, recovery suites, the minimum number of rooms and their dimensions, and accessibility into the facility.

3) Minimal Emergency Equipment: There is specific equipment that an ASC must have on hand to include, oxygen, mechanical ventilator equipment, defibrillator and cardiac monitoring, tracheotomy set, suction, laryngoscopes and endtracheal tubes, and break away lock on all crash carts.

Appendix F

Data Gathered and the Appropriate Systems

Data Pulled	System	Purpose
Backlog of surgical cases	OPLOG Clinic Register	Forecasting FY2004-2008 and identify areas for optimizing
FY04 costs for surgery	MEPRS	Utilized to assess financial ROI for each course of action identified
Provider FTEs	DHMRS	Assess the percent of FTEs providers dedicate to ambulatory surgery. Utilized as a means of identifying potential efficiencies that may be gained
Surgical case in network	M2	Forecasting FY2004-2008 and identify areas for optimizing
Surgical cases performed	OPLOG	Forecasting FY2004-2008 Workload
Turnover Time by service	OPLOG	Identify current turnover time and utilize by PAT to identify areas for optimizing

Appendix G

Medical Group Management Association (MGMA) benchmarks in an Ambulatory Setting

Service	Mean	Std. Dev.	Median	25th %tile	75th %tile	90th %tile
General Surgery	1,266	893	958	486	1,454	2,557
Obstetrics	1,231	984	751	196	2,050	2,891
Ophthalmology	2,201	1,549	1,817	1,266	2,921	3,939
Orthopedics	2,142	1,084	2,218	1,028	2,498	4,145
Otolarynology	2,036	1,216	1,983	1,390	2,560	3,862

Source: Medical Group Management Association Benchmarks in Ambulatory Surgery, 2003

Appendix H

Analysis and Comparison of FY2002 to FY2004 data by Surgery Clinic

	FY 2002				FY 2003				FY 2004			
Service	OPLOG	CHCS	Delta	% Change	OPLOG	CHCS	Delta	% Change	OPLOG	CHCS	Delta	% Change
Cardio-thoracic	23	25	-2	8.00%	12	23	-11	47.83%	8	12	-4	33.33%
Gen Surgery	689	784	-95	12.12%	504	542	-38	7.01%	571	198	373	-188.38%
Gynecology	613	616	-3	0.49%	407	360	47	-13.06%	557	142	415	-292.25%
Neurosurgery	165	162	3	-1.85%	47	74	-27	36.49%	20	7	13	-185.71%
Ophthalmology	782	782	0	0.00%	667	517	150	-29.01%	942	221	721	-326.24%
Oral Surgery	103	444	-341	76.80%	86	317	-231	72.87%	54	108	-54	50.00%
Orthopedics	911	920	-9	0.98%	494	604	-110	18.21%	483	206	277	-134.47%
Otolaryngology	588	647	-59	9.12%	436	380	56	-14.74%	565	138	427	-309.42%
Plastic Surgery	183	181	2	-1.10%	152	111	41	-36.94%	84	34	50	-147.06%
Urology	121	298	-177	59.40%	120	236	-116	49.15%	120	113	7	-6.19%
Vascular	93	94	-1	1.06%	82	64	18	-28.13%	60	22	38	-172.73%
Total Starts	4,271	4,953	-682	13.77%	3,007	3,228	-221	6.85%	3,464	1,201	2,263	-188.43%

Source: FY 02 – FY04 ambulatory surgery cases from OPLOG and CHCS

Appendix I

Seasonal Regression Model for General Surgery

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.3743
R Square	0.1401
Adjusted R Square	-0.3513
Standard Error	13.6146
Observations	12.0000

ANOVA

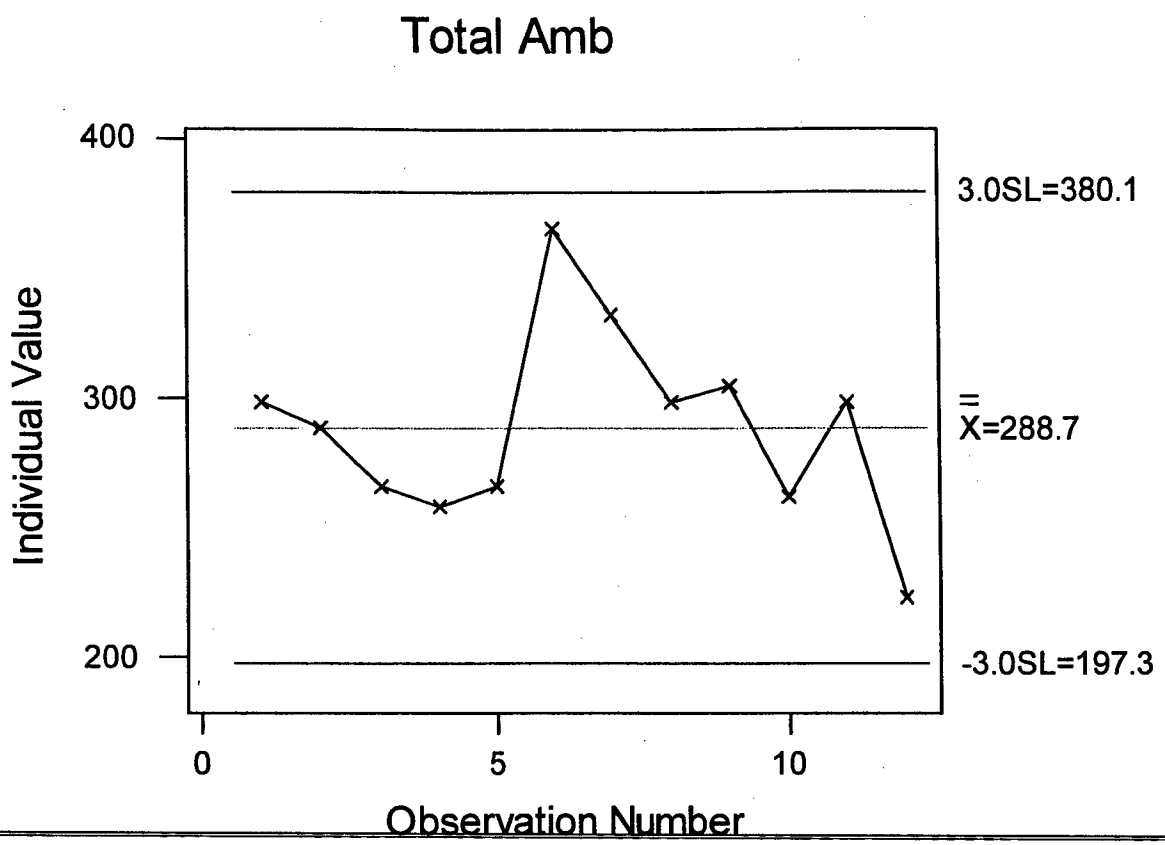
	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	211.4167	52.8542	0.2851	0.8787
Residual	7	1297.5000	185.3571		
Total	11	1508.9167			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	70.7500	53.5286	1.3217	0.2278	-55.8251	197.3251	-55.8251	197.3251
Coded Month	-2.2500	4.8135	-0.4674	0.6544	-13.6321	9.1321	-13.6321	9.1321
1st QTR	-23.9167	44.7249	-0.5348	0.6094	-129.6741	81.8408	-129.6741	81.8408
2nd QTR	-7.1667	30.9464	-0.2316	0.8235	-80.3432	66.0099	-80.3432	66.0099
3rd QTR	-3.0833	18.2236	-0.1692	0.8704	-46.1752	40.0085	-46.1752	40.0085

	Month	Time Period	Forecast	unded Forecast
FY2005				
1st QTR	Oct	13	17.5833	18
	Nov	14	15.3333	15
	Dec	15	13.0833	13
2nd QTR	Jan	16	27.5833	28
	Feb	17	25.3333	25
	Mar	18	23.0833	23
3rd QTR	Apr	19	24.9167	25
	May	20	22.6667	23
	Jun	21	20.4167	20
4th QTR	Jul	22	21.2500	21
	Aug	23	19.0000	19
	Sep	24	16.7500	17
FY2006	Oct	25	-9.4167	-9
	Nov	26	-11.6667	-12
	Dec	27	-13.9167	-14
2nd QTR	Jan	28	0.5833	1
	Feb	29	-1.6667	-2
	Mar	30	-3.9167	-4
3rd QTR	Apr	31	-2.0833	-2
	May	32	-4.3333	-4
	Jun	33	-6.5833	-7
4th QTR	Jul	34	-5.7500	-6
	Aug	35	-8.0000	-8
	Sep	36	-10.2500	-10
FY2007	Oct	37	-36.4167	-36
	Nov	38	-38.6667	-39
	Dec	39	-40.9167	-41
2nd QTR	Jan	40	-26.4167	-26
	Feb	41	-28.6667	-29
	Mar	42	-30.9167	-31
3rd QTR	Apr	43	-29.0833	-29
	May	44	-31.3333	-31
	Jun	45	-33.5833	-34
4th QTR	Jul	46	-32.7500	-33
	Aug	47	-35.0000	-35
	Sep	48	-37.2500	-37
FY2008	Oct	49	-63.4167	-63
	Nov	50	-65.6667	-66
	Dec	51	-67.9167	-68
2nd QTR	Jan	52	-53.4167	-53
	Feb	53	-55.6667	-56
	Mar	54	-57.9167	-58
3rd QTR	Apr	55	-56.0833	-56
	May	56	-58.3333	-58
	Jun	57	-60.5833	-61
4th QTR	Jul	58	-59.7500	-60
	Aug	59	-62.0000	-62
	Sep	60	-64.2500	-64

Source: Use of Excel to calculate regression model. Data obtained from OPLOG

Appendix J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200
Individual Value
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=
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0
5
10
Observation Number

Appendix K

Productivity Analysis

General Surgery Productivity Study - Outpatient	FY2004 FTEs	FY2004 Monthly FTEs
Available FTEs Outpatient Clinic	25.01	2.1
Residents/Interns/Fellows Outpatient contributing FTEs	52.04	4.3
Available FTEs in Ambulatory Surgery	5.84	0.5
Residents/Interns/Fellows APVs contributing FTEs	13.33	1.1
Total Outpatient and APV FTEs	**96**	**8.0**
	FY2004 Workload	**FY2004 Monthly Workload**
Outpatient Workload	11879	989.92
APV Workload	779	64.92
Total Outpatient and APV Workload	**12,658**	**1,055**
Productivity Analysis:		
Formula: (FY2004 monthly workload/FY2004 monthly FTEs) x 12 months to annualize		
Formula: (1,055/8 FTEs) x 12 months	**1,579**	Average visits per year
Compared to Medical Group Management Association (MGMA) Benchmarks:		
25th Percentile	486	BAMC is above
Median	958	BAMC is above
Mean	1,266	BAMC is above
75th Percentile	1,454	BAMC is above
90th Percentile	2,557	BAMC is below
BAMC General Surgery	**1,579**	

OB/GYN Productivity Study - Outpatient	FY2004 FTEs	FY2004 Monthly FTEs
Outpatient and APV FTEs		
Available FTEs Outpatient Clinic	44.53	3.7
~~Residents/Interns/Fellows Outpatient contributing FTEs~~	~~61.25~~	~~5.1~~
Pas/NPs FTE Outpatient Clinic	29.42	2.5
Available FTEs in Ambulatory Surgery	17.66	1.5
Residents/Interns/Fellows APVs contributing FTEs	14.01	1.2
PAs/NPs FTE Outpatient Clinic	0.06	0.0
	167	**14**
Outpatient and APV Workload	**FY2004 Workload**	**FY2004 Monthly Workload**
Outpatient Workload	23,183	1,932
APV Workload	649	54
Total Outpatient and APV Workload	**23,832**	**1,986**
Productivity Analysis:		
Formula: (FY2004 monthly workload/FY2004 monthly FTEs) x 12 months to annualize		
Formula: (1,986/14 FTEs) x 12 months	**1,713**	**Average visits per year**
Compared to Medical Group Management Association (MGMA) Benchmarks:		
25th Percentile	196	BAMC is above
Median	751	BAMC is above
Mean	1,231	BAMC is above
75th Percentile	2,050	BAMC is below
90th Percentile	2,891	BAMC is below
BAMC General Surgery	**1,713**	

Appendix K

Productivity Analysis

Otolarynology Productivity Study - Outpatient	FY2004 FTEs	FY2004 Monthly FTEs
Available FTEs Outpatient Clinic	16	1.3
Residents/Interns/Fellows Outpatient contributing FTEs	50	4.1
Available FTEs in Ambulatory Surgery	5.5	0.5
Residents/Interns/Fellows APVs contributing FTEs	1.12	0.1
Total Outpatient and APV FTEs	**72.26**	**6.0**
	FY2004 Workload	**FY2004 Monthly Workload**
Outpatient Workload	9,330	778
APV Workload	567	47
Total Outpatient and APV Workload	**9,897**	**825**

Productivity Analysis:

Formula: (FY2004 monthly workload/FY2004 monthly FTEs) x 12 months to annualize

Formula: (825/6 FTEs) x 12 months	**1,644**	Average visits per year

Compared to Medical Group Management Association (MGMA) Benchmarks:

25th Percentile	1,390	BAMC is above
Median	1,983	BAMC is below
Mean	2,036	BAMC is below
75th Percentile	2,560	BAMC is below
90th Percentile	3,862	BAMC is below
BAMC General Surgery	**1,644**	

Orthopedics Productivity Study - Outpatient	FY2004 FTEs	FY2004 Monthly FTEs
Available FTEs Outpatient Clinic	25.63	2.1
Residents/Interns/Fellows Outpatient contributing FTEs	77.77	6.5
Physician Outpatient FTEs	24.12	2.0
Available FTEs in Ambulatory Surgery	2.82	0.2
Residents/Interns/Fellows APVs contributing FTEs	0	0.0
Total Outpatient and APV FTEs	**130**	**11**
	FY2004 Workload	**FY2004 Monthly Workload**
Outpatient Workload	25,058	2,088
APV Workload	955	80
Total Outpatient and APV Workload	**26,013**	**2,168**

Productivity Analysis:

Formula: (FY2004 monthly workload/FY2004 monthly FTEs) x 12 months to annualize

Formula: (2,168/11 FTEs) x 12 months	**2,395**	Average visits per year

Compared to Medical Group Management Association (MGMA) Benchmarks:

25th Percentile	1,028	BAMC is above
Median	2,218	BAMC is above
Mean	2,142	BAMC is above
75th Percentile	2,498	BAMC is below
90th Percentile	4,145	BAMC is below
BAMC General Surgery	**2,395**	

Appendix K

Productivity Analysis

Opthamology Productivity Study - Outpatient	FY2004 FTEs	FY2004 Monthly FTEs
Available FTEs Outpatient Clinic	22.44	1.9
Residents/Interns/Fellows Outpatient contributing FTEs	31.67	2.6
Available FTEs in Ambulatory Surgery	3.78	0.3
Residents/Interns/Fellows APVs contributing FTEs	3.72	0.3
Physician Assistant APVs	0.92	0.1
Total Outpatient and APV FTEs	**62.53**	**5.1**
	FY2004 Workload	**FY2004 Monthly Workload**
Outpatient Workload	28665	2,389
APV Workload	900	75
Total Outpatient and APV Workload	**29,565**	**2,464**

Productivity Analysis:

Formula: (FY2004 monthly workload/FY2004 monthly FTEs) x 12 months to annualize

Formula: (2,464/5.1 FTEs) x 12 months	**5,758**	Average visits per year

Compared to Medical Group Management Association (MGMA) Benchmarks:

25th Percentile	1,266	BAMC is above
Median	1,817	BAMC is above
Mean	2,201	BAMC is above
75th Percentile	2,921	BAMC is above
90th Percentile	3,939	BAMC is above
BAMC General Surgery	**5,758**	

Appendix L

Average Time Per Case by Service (Minutes)

Service	Oct 03	Nov 03	Dec 03	Jan 04	Feb 04	Mar 04	Apr 04	May 04	Jun 04	Jul 04	Aug 04	Sep 04	Total Hrs.	No. Cases	Avg. time Per Case (hrs.)	Avg. time Per Case (Min)
Cardio-thoracic	8.0	1.8	0.0	0.0	3.7	1.9	0.0	0.0	0.0	0.0	2.6	0.0	18.0	8	2.25	135.00
Gen Surgery	94.0	51.2	56.6	69.6	62.0	94.4	87.7	62.6	61.3	60.4	98.7	57.9	856.3	571	1.50	89.98
Gynecology	42.3	66.6	81.0	63.5	62.7	64.9	56.6	61.2	48.7	50.4	69.2	63.0	730.0	557	1.31	78.64
Neurosurgery	6.8	2.5	7.1	0.0	6.4	6.7	5.7	0.0	1.0	1.9	0.0	0.0	38.1	20	1.90	114.15
Ophthalmology	77.4	78.7	73.4	77.6	73.0	95.6	91.9	103.5	108.1	58.4	75.5	81.3	994.4	942	1.06	63.33
Oral Surgery	11.3	18.6	18.1	3.9	10.9	11.4	5.6	19.6	11.7	3.8	19.8	9.5	144.4	54	2.67	160.41
Orthopedics	92.9	65.2	41.8	69.7	57.5	95.7	78.5	75.5	83.2	61.1	66.7	25.7	813.4	483	1.68	101.05
Otolaryngology	62.8	66.1	62.5	58.1	46.0	78.9	80.1	67.5	46.0	59.7	58.4	30.9	717.2	565	1.27	76.16
Plastic Surgery	60.0	14.3	30.5	27.8	17.8	31.1	18.9	8.1	12.3	24.8	10.7	15.4	271.4	84	3.23	193.85
Urology	28.2	20.8	5.8	9.6	12.7	9.7	21.9	11.5	4.9	17.9	27.0	26.7	196.7	120	1.64	98.33
Vascular	8.4	29.1	6.9	7.4	10.8	6.9	7.1	11.6	12.5	0.0	0.0	0.0	100.6	60	1.68	100.62
Total Starts	492.3	414.7	383.6	387.2	363.5	497.1	454.1	421.2	389.5	338.4	428.7	310.2	4880.3	3464	1.41	84.53

Source: OPLOG FY2004 data by month

Appendix M

Turnover Times by Service

Oct - Sep excluding over 60 minutes

Service	Count	Total Turnover Time (minutes)	Avg Turnover Time (minutes)
Cardio-thoracic	14	636	45.4
Gen Surgery	551	19499	35.4
Gynecology	448	15599	34.8
Neurosurgery	27	1122	41.6
Ophthalmology	685	12919	18.9
Oral Surgery	31	1272	41.0
Orthopedics	642	24213	37.7
Otolaryngology	422	10703	25.4
Plastic Surgery	47	1881	40.0
Urology	152	5671	37.3
Vascular	62	2375	38.3
Total	3,081	95,890	31.1

Oct - Sep excluding over 90 minutes

Service	Count	Total Turnover Time (minutes)	Avg Turnover Time (minutes)
Cardio-thoracic	19	974	51.3
Gen Surgery	656	27282	41.6
Gynecology	478	17713	37.1
Neurosurgery	36	1779	49.4
Ophthalmology	700	14027	20.0
Oral Surgery	35	1554	44.4
Orthopedics	810	36215	44.7
Otolaryngology	436	11748	26.9
Plastic Surgery	58	2673	46.1
Urology	170	6917	40.7
Vascular	77	3488	45.3
Total	3,475	124,370	35.8

Oct - Sep excluding over 120 minutes

Service	Count	Total Turnover Time (minutes)	Avg Turnover Time (minutes)
Cardio-thoracic	22	1300	59.1
Gen Surgery	693	31100	44.9
Gynecology	487	18670	38.3
Neurosurgery	38	1978	52.1
Ophthalmology	702	14226	20.3
Oral Surgery	37	1761	47.6
Orthopedics	868	42224	48.6
Otolaryngology	445	12648	28.4
Plastic Surgery	59	2768	46.9
Urology	178	7731	43.4
Vascular	82	4014	49.0
Total	3,611	138,420	38.3

Source: OPLOG

Appendix N

Required Number of Operating Rooms (All Beneficiations)

Forecasted Workload Only – Worst Case

Calculations - Worst Case (Turnover Time based on FY2004):

		Total ORs	5.201	Rounded 5		
General						
General Surgery	620	2.48	89.98	35.4	125.38	0.864
Gynecology	589	2.356	78.64	34.8	113.44	0.742
Opthalmology	1398	5.592	63.33	18.9	82.23	1.277
Oral Surgery	57	0.228	160.41	41	201.41	0.128
Otolaryngology	565	2.26	76.16	25.4	101.56	0.638
Plastic Surgery	84	0.336	193.85	40	233.85	0.218
Urology	296	1.184	98.33	37.3	135.63	0.446
Vascular	60	0.24	100.62	38.3	138.92	0.093
						4.41

Special

Service	Forecasted Cases	Avg. Cases Per Day	Avg. Time Per Service (Minutes)	Turnover Time Per Service (Minutes)	Total Time Per Service	No. of ORs
Orthopedics	483	1.932	101.05	37.70	138.75	0.745
Cardio-thoracic	8	0.032	135	45.40	180.40	0.016
Neruosurgery	20	0.08	114.15	41.60	155.75	0.035
						0.795

Appendix N

Required Number of Operating Rooms (All Beneficiations)

Forecasted Workload Only – Most Probably

Calculations - Most Probably (Turnover Time based on FY2004 and decreased by 50%):

		Rounded
Total ORs	4.52	5

General

Service	Forecasted Cases	Avg. Cases Per Day	Avg. Time Per Service (Minutes)	Turnover Time Per Service (Minutes)	Total Time Per Service	No. of ORs
General Surgery	620	2.48	89.98	17.7	107.68	0.742
Gynecology	589	2.356	78.64	17.4	96.04	0.629
Opthalmology	1398	5.592	63.33	9.45	72.78	1.131
Oral Surgery	57	0.228	160.41	20.5	180.91	0.115
Otolaryngology	565	2.26	76.16	12.7	88.86	0.558
Plastic Surgery	84	0.336	193.85	20	213.85	0.200
Urology	296	1.184	98.33	18.65	116.98	0.385
Vascular	60	0.24	100.62	19.15	119.77	0.080
						3.84

Special

Service	Forecasted Cases	Avg. Cases Per Day	Avg. Time Per Service (Minutes)	Turnover Time Per Service (Minutes)	Total Time Per Service	No. of ORs
Orthopedics	483	1.932	101.05	18.85	119.90	0.643
Cardio-thoracic	8	0.032	135	22.70	157.70	0.014
Neruosurgery	20	0.08	114.15	20.80	134.95	0.030
						0.687

Appendix N

Required Number of Operating Rooms (All Beneficiations)

Forecasted Workload Only – Best Case

Calculations - Best Case (Turnover Time is 15 minutes):

		Rounded
Total	4.55	5

Service	Forecasted Cases	Avg. Cases Per Day	Avg. Time Per Service (Minutes)	Turnover Time Per Service (Minutes)	Total Time Per Service	No. of ORs
General Surgery	620	2.48	89.98	15	104.98	0.723
Gynecology	589	2.356	78.64	15	93.64	0.613
Opthalmology	1398	5.592	63.33	15	78.33	1.217
Oral Surgery	57	0.228	160.41	15	175.41	0.111
Otolaryngology	565	2.26	76.16	15	91.16	0.572
Plastic Surgery	84	0.336	193.85	15	208.85	0.195
Urology	296	1.184	98.33	15	113.33	0.373
Vascular	60	0.24	100.62	15	115.62	0.077
						3.88

Special

Service	Forecasted Cases	Avg. Cases Per Day	Avg. Time Per Service (Minutes)	Turnover Time Per Service (Minutes)	Total Time Per Service	No. of ORs
Orthopedics	483	1.932	101.05	15.00	116.05	0.623
Cardio-thoracic	8	0.032	135	15.00	150.00	0.013
Neruosurgery	20	0.08	114.15	15.00	129.15	0.029
						0.665

Appendix N

Required Number of Operating Rooms (All Beneficiations)

Forecasted and Backlogged Workload

Calculations - Worst Case (Turnover Time based on FY2004):

Service	Forecasted Cases	Backlog	Total Cases	Avg. Cases Per Day	Avg. Time Per Service (Minutes)	Turnover Time Per Service (Minutes)	Total Time Per Service	No. of ORs
General Surgery	620	112	732	2.928	89.98	35.4	125.38	1.020
Gynecology	589	60	649	2.596	78.64	34.8	113.44	0.818
Opthalmology	1398	151	1549	6.196	63.33	18.9	82.23	1.415
Oral Surgery	57	20	77	0.308	160.41	41	201.41	0.172
Otolaryngology	565	33	598	2.392	76.16	25.4	101.56	0.675
Plastic Surgery	84	17	101	0.404	193.85	40	233.85	0.262
Urology	296	78	374	1.496	98.33	37.3	135.63	0.564
Vascular	60	0	60	0.24	100.62	38.3	138.92	0.093
Orthopedics	483	259	742	2.968	101.05	37.70	138.75	1.144
Cardio-thoracic	8	0	8	0.032	135	45.40	180.40	0.016
Neruosurgery	20	16	36	0.144	114.15	41.60	155.75	0.062
							ORs Required	6

Calculations - Most Probably (Turnover Time based on FY2004 and decreased by 50%):

Service	Forecasted Cases	Backlog	Total	Avg. Cases Per Day	Avg. Time Per Service (Minutes)	Turnover Time Per Service (Minutes)	Total Time Per Service	No. of ORs
General Surgery	620	112	732	2.928	89.98	17.7	107.68	0.876
Gynecology	589	60	649	2.596	78.64	17.4	96.04	0.693
Opthalmology	1398	151	1549	6.196	63.33	9.45	72.78	1.253
Oral Surgery	57	20	77	0.308	160.41	20.5	180.91	0.155
Otolaryngology	565	33	598	2.392	76.16	12.7	88.86	0.590
Plastic Surgery	84	17	101	0.404	193.85	20	213.85	0.240
Urology	296	78	374	1.496	98.33	18.65	116.98	0.486
Vascular	60	0	60	0.24	100.62	19.15	119.77	0.080
Orthopedics	483	259	742	2.968	101.05	18.85	119.90	0.989
Cardio-thoracic	8	0	8	0.032	135	22.70	157.70	0.014
Neruosurgery	20	16	36	0.144	114.15	20.80	134.95	0.054
								5

Calculations - Best Case (Turnover Time is 15 minutes):

Service	Forecasted Cases	Backlog	Total	Avg. Cases Per Day	Avg. Time Per Service (Minutes)	Turnover Time Per Service (Minutes)	Total Time Per Service	No. of ORs
General Surgery	620	112	732	2.928	89.98	15	104.98	0.854
Gynecology	589	60	649	2.596	78.64	15	93.64	0.675
Opthalmology	1398	151	1549	6.196	63.33	15	78.33	1.348
Oral Surgery	57	20	77	0.308	160.41	15	175.41	0.150
Otolaryngology	565	33	598	2.392	76.16	15	91.16	0.606
Plastic Surgery	84	17	101	0.404	193.85	15	208.85	0.234
Urology	296	78	374	1.496	98.33	15	113.33	0.471
Vascular	60	0	60	0.24	100.62	15	115.62	0.077
Orthopedics	483	259	742	2.968	101.05	15.00	116.05	0.957
Cardio-thoracic	8	0	8	0.032	135	15.00	150.00	0.013
Neruosurgery	20	16	36	0.144	114.15	15.00	129.15	0.052
								5

Appendix N

Required Number of Operating Rooms (All Beneficiations)

Forecasted and Network Workload

Calculations - Worst Case (Turnover Time based on FY2004):

Service	Forecasted Cases	Network Cases	Total Cases	Avg. Cases Per Day	Avg. Time Per Service (Minutes)	Turnover Time Per Service (Minutes)	Total Time Per Service	No. of ORs
General Surgery	620	452	1072	4.288	89.98	35.4	125.38	1.493
Gynecology	589	37	626	2.504	78.64	34.8	113.44	0.789
Opthalmology	1398	76	1474	5.896	63.33	18.9	82.23	1.347
Oral Surgery	57	4	61	0.244	160.41	41	201.41	0.137
Otolaryngology	565	101	666	2.664	76.16	25.4	101.56	0.752
Plastic Surgery	84	52	136	0.544	193.85	40	233.85	0.353
Urology	296	70	366	1.464	98.33	37.3	135.63	0.552
Vascular	60	0	60	0.24	100.62	38.3	138.92	0.093
Orthopedics	483	263	746	2.984	101.05	37.70	138.75	1.150
Cardio-thoracic	8	2	10	0.04	135	45.40	180.40	0.020
Neruosurgery	20	366	386	1.544	114.15	41.60	155.75	0.668
						ORs Required		7

Calculations - Most Probably (Turnover Time based on FY2004 and decreased by 50%):

Service	Forecasted Cases	Network Cases	Total Cases	Avg. Cases Per Day	Avg. Time Per Service (Minutes)	Turnover Time Per Service (Minutes)	Total Time Per Service	No. of ORs
General Surgery	620	452	1072	4.288	89.98	17.7	107.68	1.283
Gynecology	589	37	626	2.504	78.64	17.4	96.04	0.668
Opthalmology	1398	76	1474	5.896	63.33	9.45	72.78	1.192
Oral Surgery	57	4	61	0.244	160.41	20.5	180.91	0.123
Otolaryngology	565	101	666	2.664	76.16	12.7	88.86	0.658
Plastic Surgery	84	52	136	0.544	193.85	20	213.85	0.323
Urology	296	70	366	1.464	98.33	18.65	116.98	0.476
Vascular	60	0	60	0.24	100.62	19.15	119.77	0.080
Orthopedics	483	263	746	2.984	101.05	18.85	119.90	0.994
Cardio-thoracic	8	2	10	0.04	135	22.70	157.70	0.018
Neruosurgery	20	366	386	1.544	114.15	20.80	134.95	0.579
						ORs Required		6

Calculations - Best Case (Turnover Time based on 15 minute benchmark):

Service	Forecasted Cases	Network Cases	Total Cases	Avg. Cases Per Day	Avg. Time Per Service (Minutes)	Turnover Time Per Service (Minutes)	Total Time Per Service	No. of ORs
General Surgery	620	452	1072	4.288	89.98	15	104.98	1.250
Gynecology	589	37	626	2.504	78.64	15	93.64	0.651
Opthalmology	1398	76	1474	5.896	63.33	15	78.33	1.283
Oral Surgery	57	4	61	0.244	160.41	15	175.41	0.119
Otolaryngology	565	101	666	2.664	76.16	15	91.16	0.675
Plastic Surgery	84	52	136	0.544	193.85	15	208.85	0.316
Urology	296	70	366	1.464	98.33	15	113.33	0.461
Vascular	60	0	60	0.24	100.62	15	115.62	0.077
Orthopedics	483	263	746	2.984	101.05	15.00	116.05	0.962
Cardio-thoracic	8	2	10	0.04	135	15.00	150.00	0.017
Neruosurgery	20	366	386	1.544	114.15	15.00	129.15	0.554
						ORs Required		6

Appendix N

Required Number of Operating Rooms (All Beneficiations)

Forecasted, Backlogged, and Network Workload

Calculations - Worst Case (Turnover Time based on FY2004):

Service	Forecasted Cases	Backlog	Network Cases	Total Cases	Avg. Cases Per Day	Avg. Time Per Service (Minutes)	Turnover Time Per Service (Minutes)	Total Time Per Service	No. of ORs
General Surgery	620	112	452	1184	4.736	89.98	35.4	125.38	1.649
Gynecology	589	60	37	686	2.744	78.64	34.8	113.44	0.865
Opthalmology	1398	151	76	1625	6.5	63.33	18.9	82.23	1.485
Oral Surgery	57	20	4	81	0.324	160.41	41	201.41	0.181
Otolaryngology	565	33	101	699	2.796	76.16	25.4	101.56	0.789
Plastic Surgery	84	17	52	153	0.612	193.85	40	233.85	0.398
Urology	296	78	70	444	1.776	98.33	37.3	135.63	0.669
Vascular	60	0	0	60	0.24	100.62	38.3	138.92	0.093
Orthopedics	483	259	263	1005	4.02	101.05	37.70	138.75	1.549
Cardio-thoracic	8	0	2	10	0.04	135	45.40	180.40	0.020
Neruosurgery	20	16	366	402	1.608	114.15	41.60	155.75	0.696
									2

Calculations - Most Probably (Turnover Time based on FY2004 and decreased by 50%):

Service	Forecasted Cases	Backlog	Network Cases	Total Cases	Avg. Cases Per Day	Avg. Time Per Service (Minutes)	Turnover Time Per Service (Minutes)	Total Time Per Service	No. of ORs
General Surgery	620	112	452	1184	4.736	89.98	17.7	107.68	1.417
Gynecology	589	60	37	686	2.744	78.64	17.4	96.04	0.732
Opthalmology	1398	151	76	1625	6.5	63.33	9.45	72.78	1.314
Oral Surgery	57	20	4	81	0.324	160.41	20.5	180.91	0.163
Otolaryngology	565	33	101	699	2.796	76.16	12.7	88.86	0.690
Plastic Surgery	84	17	52	153	0.612	193.85	20	213.85	0.364
Urology	296	78	70	444	1.776	98.33	18.65	116.98	0.577
Vascular	60	0	0	60	0.24	100.62	19.15	119.77	0.080
Orthopedics	483	259	263	1005	4.02	101.05	18.85	119.90	1.339
Cardio-thoracic	8	0	2	10	0.04	135	22.70	157.70	0.018
Neruosurgery	20	16	366	402	1.608	114.15	20.80	134.95	0.603
									7

Calculations - Best Case (Turnover Time based on 15 minute benchmark):

Service	Forecasted Cases	Backlog	Network Cases	Total Cases	Avg. Cases Per Day	Avg. Time Per Service (Minutes)	Turnover Time Per Service (Minutes)	Total Time Per Service	No. of ORs
General Surgery	620	112	452	1184	4.736	89.98	15	104.98	1.381
Gynecology	589	60	37	686	2.744	78.64	15	93.64	0.714
Opthalmology	1398	151	76	1625	6.5	63.33	15	78.33	1.414
Oral Surgery	57	20	4	81	0.324	160.41	15	175.41	0.158
Otolaryngology	565	33	101	699	2.796	76.16	15	91.16	0.708
Plastic Surgery	84	17	52	153	0.612	193.85	15	208.85	0.355
Urology	296	78	70	444	1.776	98.33	15	113.33	0.559
Vascular	60	0	0	60	0.24	100.62	15	115.62	0.077
Orthopedics	483	259	263	1005	2.968	101.05	15.00	116.05	0.957
Cardio-thoracic	8	0	2	10	0.032	135	15.00	150.00	0.013
Neruosurgery	20	16	366	402	0.144	114.15	15.00	129.15	0.052
									6

Appendix O

Required Number of Operating Rooms (Beneficiations, Less Over 65)

Forecasted Workload Only	No. of ORs
Calculations - Worst Case (Turnover Time based on FY2004):	4
Calculations - Most Probably (Turnover Time decreased by 50%):	3
Calculations - Best Case (Turnover Time based on 15 minutes):	3

Forecasted and Backlogged Workload	No. of ORs
Calculations - Worst Case (Turnover Time based on FY2004):	5
Calculations - Most Probably (Turnover Time decreased by 50%):	4
Calculations - Best Case (Turnover Time based on 15 minutes):	4

Forecasted and Network Workload	No. of ORs
Calculations - Worst Case (Turnover Time based on FY2004):	6
Calculations - Most Probably (Turnover Time decreased by 50%):	5
Calculations - Best Case (Turnover Time based on 15 minutes):	5

Forecasted, Backlogged, and Network Workload	No. of ORs
Calculations - Worst Case (Turnover Time based on FY2004):	7
Calculations - Most Probably (Turnover Time decreased by 50%):	6
Calculations - Best Case (Turnover Time based on 15 minutes):	5

Appendix P

Surgery Times by Service for all Beneficiaries, less over 65

Service	Patients Less Than Age 65			
	Cases	Minutes	min/case	hr/case
Cardiothoracic	4	539	134.75	2.245833
General Surg	578	52848	91.43253	1.523875
Gynecology	620	47530	76.66129	1.277688
Neurology	34	3692	108.5882	1.809804
Ophthalmology	351	26885	76.59544	1.276591
Oral Surgery	62	9756	157.3548	2.622581
Orthopedics	559	58395	104.4633	1.741055
Otolaryngology	550	45010	81.83636	1.363939
Plastic Surgery	90	17833	198.1444	3.302407
Urology	84	8975	106.8452	1.780754
Vascular	52	5211	100.2115	1.670192

Source: OPLOG

Appendix Q

Automated Staffing Assessment Model (Page 1)

MTF: **WORK CENTER:** **ANESTHESIA-OR SERVICE PACU / AMB PROC UNIT WORKSHEET**

A.	43100	- CURRENT POPULATION
B.	46196	- FORECASTED POPULATION (FY2008 forecasted enrolled population from MCFAS)
C.	1	- FACILITY SIZE = NO OR = 0, MEDCEN = 1, MEDDAC = 2, AHCC =3
D.	7	- HOW MANY SURGICAL O.R.'s ARE IN YOUR FACILITY?
E.	0	- HOW MANY LABOR & DELIVERY O.R.'s ARE IN YOUR FACILITY?
F.	0	- WHAT IS THE OPTIMUM SURGICAL CASE LOAD FOR YOUR FACILITY?
G.	289	- WHAT IS THE CURRENT AVERAGE MONTHLY NUMBER OF SURGICAL CASES PERFORMED IN THE OPERATING ROOM SUITE? (SEPARATE OUT OB DELIVERIES FROM THIS NUMBER AND PLACE IN ITEM J) *DEFINITION OF SURGICAL CASE PERFORMED -* The average monthly number of all surgical cases involving one or more procedures perf equipped and prepared operating room or designated area, requiring an Anesthesiologist or Certified Registered Nurse Anesthetist (CRNA) Nurse, or an Operating Room Technician.
H.	348	FORECASTED AVG MONTHLY NUMBER OF SURGICAL CASES TO BE PERFORMED IN THE OR SUITE
I.	188	- WHAT IS THE AVERAGE MONTHLY NUMBER OF SURGICAL CASES, NORMALLY PERFORMED WITHIN THE FACILITY O.R., BUT SENT O INADEQUATE SURGICAL RESOURCES (Closed O.R.'s or Anesth/O.R. Personnel Shortage) to MEET TRICARE STANDARD? Source: M2 FY2004 data (Network) and OPLOG (Backlog) (348 + 181 = 529 additional APVs for marginal costs by month)
J.	0.0	- WHAT IS THE AVERAGE MONTHLY NUMBER OF OB DELIVERIES PERFORMED IN THE OPERATING ROOM SUITE?
K.	0.00	- WHAT PERCENT OF SURGICAL CASES ARE STARTED AT THE INDICATED HOURS? (1700-0700 HRS M-F) (0700-0700 SAT, SUN, & HOL)
L.	0	- NUMBER OF HOURS PER WEEK THAT AN ANESTHESIA RESOURCE IS ROUTINELY ASSIGNED TO SUPPORT A PAIN MANAGEMENT CLI
M.	0	- NUMBER OF HOURS PER WEEK THAT AN ANESTHESIA RESOURCE IS ROUTINELY ASSIGNED TO SUPPORT A PROCEDURES ROOM (D
N.	N	- DO YOU HAVE AN ANESTHESIA RESOURCE ASSIGNED IN THE L&D UNIT 24 HOURS PER DAY (Y / N)?
	OR	
	0	- AVERAGE MONTHLY NUMBER OF EPIDURAL OR OTHER TYPES OF ANESTHETIC PROCEDURES PROVIDED TO THE L&D UNIT.
O.	0	- NUMBER OF CLINICS / WARDS SUPPORTED BY CMS
P.	0.0	- AVERAGE MONTHLY NUMBER OF PROCEDURES THAT AN O.R. RESOURCE ASSISTS WITH ON THE L&D UNIT. ~~(ONLY ACCOUNT FOR THIS WORKLOAD IF IT IS NOT ACCOUNTED FOR IN CASE WORKLOAD NUMBERS ABOVE)~~
Q.	0.0	- MONTHLY AVERAGE NUMBER OF PROCEDURES THAT AN O.R. RESOURCE ASSISTS WITH OUTSIDE THE OR, OTHER THAN ON L & D.
R.	7800	- ANNUAL NUMBER OF PATIENTS RECOVERED (PACU) Source: PACU (includes OR patients and patient receiving procedures from withi
S.	1342817	- ANNUAL MINUTES OF SERVICE FOR AMBULATORY PROCEDURES (DGAA) Source: Resource Management Division, FY2004 MEPI
T.	765687	- ANNUAL MINUTES OF SERVICE FOR SURGICAL PROCESSING (DGEA) Source: Resource Management Division, FY2004 MEPI
U.	38	- ANNUAL NUMBER OF MILITARY PHASE II OR ENLISTED STUDENTS TRAINED - 301-91D
V.	4	- ANNUAL NUMBER OF MILITARY PHASE II GRADUATE ANESTHESIA STUDENTS TRAINED- 6F-66F

Source: Automated Staffing Assessment Model, MEDCOM

Appendix Q

Automated Staffing Assessment Model (Page 2)

Summary of Planning Factors and Anesthesia Manpower Recommendations

SUMMARY

O.R. SUITE DATA:

D	7	# OF FACILITY SURGICAL O.R.'s
E	0	# OF FACILITY L&D O.R.'s
F	0	OPTIMUM FACLITY SURGICAL CASE LOAD
H	348	FORECASTED AVERAGE MONTHLY NUMBER OF SURGICAL CASES PERFORMED IN THE O.R.
I	188	AVERAGE MONTHLY NUMBER OF SURGICAL CASES NORMALLY PERFORMED IN HOUSE BUT SENT OUTSIDE
J	0.0	FORECASTED AVERAGE MONTHLY NUMBER OF OB DELIVERIES PERFORMED
HIJ	536	FORECASTED TOTAL MONTHLY AVG CASES **(Performed In + Sent Out of facility)**
K	0.00	% OF AFTER HOUR CASES PERFORMED **(STARTED AFTER 1530 HOURS WEEKDAYS. WEEKENDS & HOLIDAYS)**
	536	FORECASTED AVERAGE MONTHLY NUMBER OF DUTY DAY SURGICAL CASES PERFORMED (Tot Mo Avg # of Cases MINUS Avg Mo # of Su
	0.000	FORECASTED AVERAGE MONTHLY NUMBER OF SURGICAL CASES PERFORMED AFTER DUTY DAY HOURS (Avg Mo # of Surg Cases Perf

CURRENT O.R. SUITE (NORMAL DUTY DAY CASE DATA):

	25.6	AVG # OF SURGICAL CASES PER DAY -AVG MONTHLY NUMBER OF DUTY DAY SURGICAL CASES PERFORMED DIVIDED BY STANDARD
	1.7	AVG # OF HOURS PER CASE - MEDCEN 3.7 MEDDAC 2.7 AHCC 2.0 (Incorpoated 1.5 hours -
X1	5	O.R.'s FOR CURRENT NORMAL DUTY DAY SURGICAL CASE LO -AVG MONTHLY NUMBER OF CASES PERFORMED X AVG # OF HOURS PER CASE MONTH (20.91) DIVIDED BY 8 HRS

DISPARITIES: (OPTIMUM vs ACTUAL)

-348	MONTHLY CASE DIFFERENCE - OPTIMUM FACILITY SURGICAL CASE LOAD MINUS AVERAGE MONTHLY NUMBER OF SURGICAL CASES PE
-16.6	DAILY CASE DIFFERENCE - MONTHLY CASE DIFFERENCE DIVIDED BY STANDARD WORK DAYS PER MONTH (20.91)
-3.5	ADDITIONAL O.R.'s TO MEET OPTIMUM SURGICAL CASE LOAD - MONTHLY CASE DIFFERENCE X AVG # OF HOURS PER CASE DIVIDED BY STAN (20.91) DIVIDED BY 8 HRS

O.R.'s REQUIRED TO MEET OPTIMUM CASE LOAD

100%	% = # OF SURGICAL O.R.'s DIVIDED BY SUM OF SURGICAL & L&D O.R.'s
2	SURGICAL (#OF OR'S REQUIRED FOR CURRENT DAY CASE LOAD PLUS ADDITIONAL OR'S REQUIRED FOR OPTIMUM CASE LOAD TIMES
0.0	LABOR & DELIVERY

ANES MANPOWER EQUATION APPLICATION 6.0

WORKLOAD:		COMMENT	STAFF
Y1 = (X1 * X2)	CASELOAD		15.746
Y2 = (((X3 + X4) * 4.348) / 145) + X5 + X6	PAIN MGMT, PROCEDURES, L&D		0.000
READINESS:			
Y3 = (X4 / 1740)	MILITARY READINESS		0.052
EDUCATION:			
Y4 = (X5) PROGRAMED	PRG RESIDENTS		0.000
Y5 = IF (X5 * 0.10 >= 1, 1, X5 * 0.10)	RES PRG DIR		0.000
Y6 = (X5 / 10)	GME PRG ADM		0.000
Y7 = (X6)	ADD GME PHY	3	0.000
Y8 = (X7 * 50) / 1740	CONTINUING EDUCATION		0.000
MTF UNIQUE:			
Y9 = (X8)	OTHER	1	0.000
			15.797
		TOTAL	**16.000**

RECOMMENDED BREAKOUT:

ANEST	CRNA	TECH	*MAY ADJUST %* CLK	
30%	55%	10%	5%	
4.800	8.800	1.600	0.800	TOTAL
5	9	2	1	6.0

Appendix Q

Automated Staffing Assessment Model (Page 3)

OR, CMS, Nursing Anesthesia, PACU, and Ambulatory Procedures

Manpower Recommendations

OR / CMS — **62.0**

Y1 = (X2 + X3) * X1	CMS CASE WORKLOAD	9.565
Y2 = ((X4 * 4.196) * 4.348) / 145	CMS CLINIC / WARD WORKLOAD	0.000
Y3 = (X3 * X5) + (X3 * X6)	INSIDE OR CASE WORKLOAD	47.825
Y4 = ((X7 * 2.8) + (X8 * 2)) / 145	OUTSIDE OR CASE WORKLOAD	0.000
Y5 = (X9 * 0.1)	NEW ORIENTEES	0.000
Y6 = (X10 * 21) / 1740	CONTINUING EDUCATION	0.000
Y7 = (X11 * 90) / 1740	MILITARY READINESS	0.000
Y8 = ((X12 * 384) / 1740) / 3	91D PHASE II	2.795
	TOTAL	**60.186**
Y9 = ((POWER (X13 , 0.1251)) * 145) / 145	OR NURSING SUPERVISOR	1.770
		61.956
	TOTAL	**62.000**

RECOMMENDED BREAKOUT: ***MAY ADJUST %***

RN	TECH	SUP / ADMIN	
20%	**75%**	**5%**	TOTAL

NURSE ANES MANPOWER EQUATION APPLICATION — **12.0**

		STAFF
Y1 = (X1 * X2)	CASELOAD	15.746
Y2 = (((X3 + X4) * 4.348) / 145) + X5 + X6	(PAIN MGMT, PROCEDURES, L&D)	0.000
Y3 = (X7 / 1740)	PROF MILITARY READINESS	0.000
Y4 = (X8 * 35.04) / 1740	CONTINUING EDUCATION	0.000
Y5 = ((X9 * 3059) / 2610) / 2	NUR ANESTHESIA PHASE II COURSE	2.344
		18.090
	TOTAL	**18.000**

RECOMMENDED BREAKOUT: ***MAY ADJUST %***

ANEST	CRNA	TECH	CLK	
0.30	**0.55**	**0.10**	**0.05**	
5.400	9.900	1.800	0.900	TOTAL
5.0	**10.0**	**2.0**	1.0	12.0

PACU MANPOWER EQUATION APPLICATION — **14.0**

	COMMENT	STAFF
Y1 = (X1 * 3) / 1740		14.414
Y2 = (X2 / 1740)		0.000
Y3 = (X3 * 21) / 1740		0.000
Y4 = (X4 * 90) / 1740		0.000
		14.414
	TOTAL	**14.000**

RECOMMENDED BREAKOUT: ***MAY ADJUST %***

RN	LVN	NA	CLK	
60%	**25%**	**5%**	**10%**	TOTAL
8	4	1	1	14

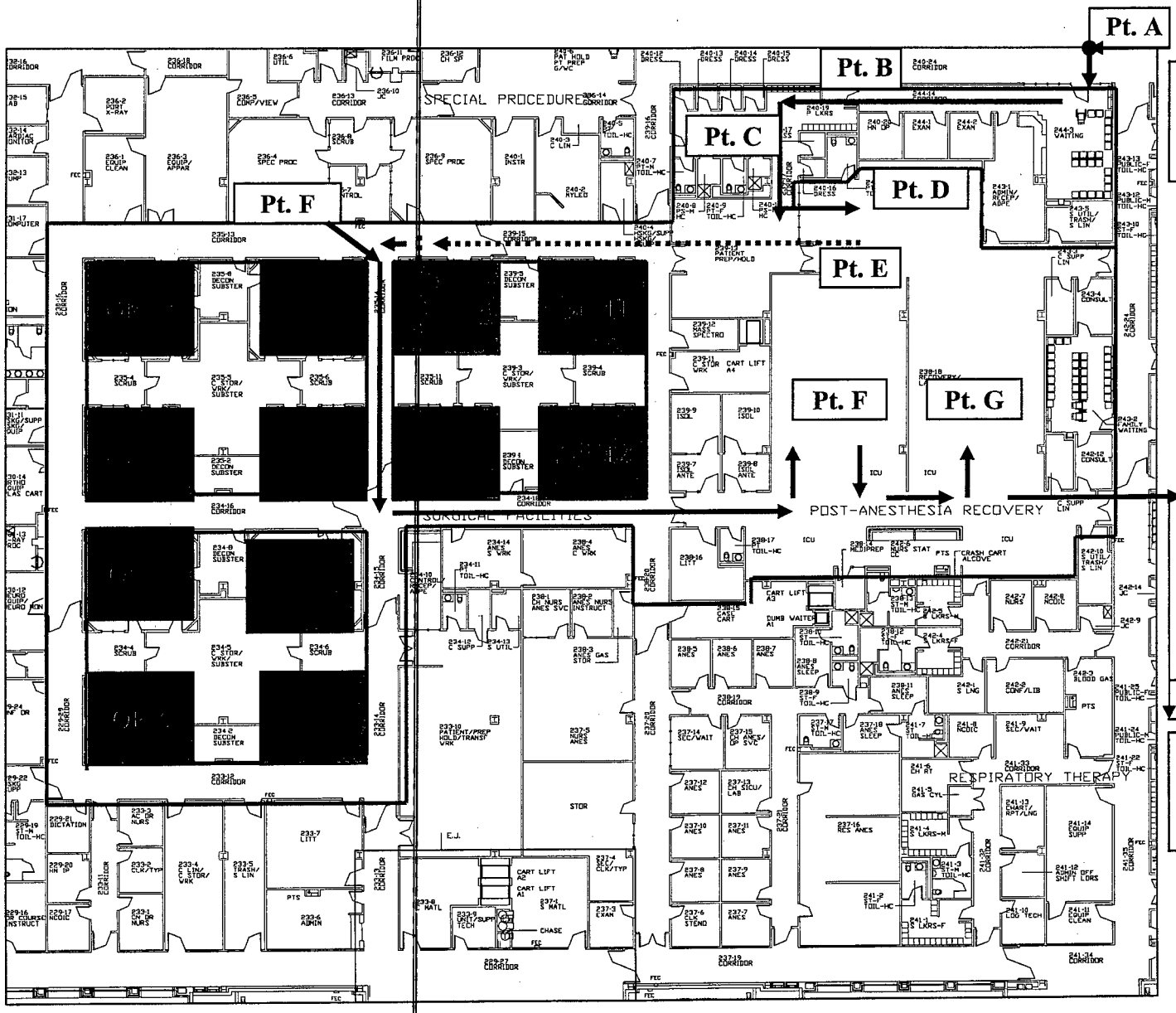
AMBL PROC MANPOWER EQUATION APPLICATION — **22.0**

		COMMENT	STAFF
Y1 = (X1 / 60) / 1740	AMB PROC		13.786
Y2 = (X2 / 60) / 1740	PRE-ADMIT		7.861
Y3 = (X3 / 1740)			0.000
Y4 = (X4 * 21) / 1740			0.000
Y5 = (X5 * 90) / 1740			0.000
			21.647
		TOTAL	**22.000**

RECOMMENDED BREAKOUT: ***MAY ADJUST %***

RN	LVN	NA	CLK	
60%	**25%**	**5%**	**10%**	TOTAL
13	6	1	2	22

Notes:
Pt. A - Enter SDS
Pt. B - Vitals/Change
Pt. C - Sit-in Chair
Pt. D - Lie in gunnery, wait to be taken to OR
Pt. E - Taken to OR
Can be any of the 12 ORs
Dotted line indicates this.
Pt. F - Taken from OR to Phase I recovery
Pt. G - Taken from Phase I recovery to Phase II recovery
Pt. H - Discharged



Entrance to the Same Day Surgery Unit

Patient is discharged from Phase II

Physical Layout for COA 1

Appendix R

Appendix S

Standalone Same Day Surgery Center (Page 1)

DoD Space Planning Criteria Estimation of Square Footage

Ambulatory Surgery

January 1, 2005

ROOM DESCRIPTION	NSF	4 ORs Qty	nsf	Add. Nsf	Total	Forecasted 5 ORs Qty	nsf	Add. Nsf	Total	Forecasted 6 ORs Qty	nsf	Add. Nsf	Total	Forecasted, Backlog, & Network 7 ORs Qty	nsf	Add. Nsf	Total	COMMENTS
RECEPTION AREAS																		
Family Waiting Area	120	1	120	80	200	1	120	120	240	1	120	160	280	1	120	200	320	120 nsf for 2 ORs and 40 nsf for each OR above 2
Vending Area	40	1	40	0	40	1	40	0	40	1	40	0	40	1	40	0	40	1 40 nsf area when there are 4 or more ORs
Family Counseling Area	120	1	120	0	120	2	240	-	240	2	240	-	240	2	240	-	480	1 if 4 ORs and 2 if greater than 4 ORs
Waiting Room Toilet	60	1	60	0	60	1	60	0	60	1	60	0	60	1	60	0	60	One per family waiting room area
Anesthesia Counseling Area																		
Patient Reception	180	1	180	0	180	1	180	0	180	1	180	0	180	1	180	0	180	Used for Patient Control
Waiting Area	120	16	1920	0	1920	20	2400	0	2400	24	2880	0	2880	28	3360	0	3360	14 nsf per seat 4 seats per OR
Public Toilets	60	1	60	0	60	2	120	0	120	2	120	0	120	2	120	0	120	1 if 4 ORs, Male and Female if greater than 4 ORs (2 each)
Exam Room	120	2	240	0	240	2	240		240	3	360	0	360	3	360	0	360	1 per every 2 ORs
EKG Room	120	1	120	0	120	1	120	0	120	1	120	0	120	2	240	0	240	1 for every 4 ORs
Laboratory Drawing Room	60	1	60	0	60	1	60	60	120	1	60	120	180	1	60	180	240	One for every 4 ORs and 60 nsf for each OR above 4
Anesthesia																		
Chief of Anesthesiology	120	1	120	0	120	1	120	0	120	1	120	0	120	1	120	0	120	One per OR suite
Workstation Anesthesiologist/Nurse	60	4	240	0	240	5	300	0	300	6	360	0	360	7	420	0	420	One per FTE
Office Secretary	120	1	120	0	120	1	120	0	120	1	120	0	120	1	120	0	120	One per Facility
Anesthesia Workroom, Clean	30	4	120	0	120	5	150		150	6	180	0	180	7	210	0	210	30 nsf per OR
Anesthesia Workroom, Soiled	20	4	80	0	80	5	100	0	100	6	120	0	120	7	140	0	140	20 nsf per OR
Medication Storage	10	4	40	0	40	5	50	60	110	6	60	120	180	7	70	180	250	10 nsf per FTE
Anesthesia Gas Storage (Empty Containers)	50	1	50	0	50	1	50	0	50	1	50	0	50	1	50	0	50	One per surgical suite
Anesthesia Gas Storage (Full Containers)	50	1	50	0	50	1	50	0	50	1	50	0	50	1	50	0	50	One per surgical suite
Students workstations	60	2	120	0	120	2	120	0	120	2	120	0	120	2	120	0	120	60 nsf per student Planning factor of 2 students rotating through area
Pre-Operational Holding (section 4.4.5):																		
Patient Holding Room	120	1	120	80	200	1	120	120	240	1	120	160	280	1	120	200	320	120 for 2 ORs, 40 nsf per additional OR
Patient Prep/Induction	120	6	720	0	720	7.5	900	0	900	9	1080	0	1080	10.5	1260	0	1260	120 NSF per station & 1.5 stations per OR
Medprep Alcove	60	6	240	0	240	7.5	300	0	300	9	360	0	360	10.5	420	0	420	One per pre-op prep/Induction area
Patient Changing Rooms					0				0				0				0	For ambulatory patients only
Female Changing Area	40	2	80	60	140	2	80	60	140	2	80	120	200	2	80	120	200	60 nsf for 2 ORs + 60 nsf for each 2 ORs
Changing Room Toilet (Female)	60	4	240		240	5	300	0	300	6	360	120	480	7	420	120	540	1 per female changing room
Male Changing Area	40	2	80	60	140	2	80	60	140	2	80	120	200	2	80	120	200	60 nsf for 2 ORs + 60 nsf for each 2 ORs
Changing Room Toilet (Male)	60	4	240		240	5	300	0	300	6	360	120	480	7	420	120	540	
Clean Supply/Linen	30	4	120	0	120	4	120	10	130	6	180	0	180	6	180	10	190	30 nsf for first 2 ORs, 10 nsf each additional OR
Litter Holding Area	80	1	80	0	80	1	80	0	80	2	80	0	80	2	160	0	160	One per 4 ORs
OR Prep-Hold Work Station	40	1	40	0	40	1	40	0	40	1	40	0	40	1	40	0	40	
Soiled Utility	100	1	100	0	100	1	100	0	100	1	100	0	100	1	100	0	100	100 nsf per pre-surgery patient holding area
Surgical Suite (Section 4.4.5 and 3.33)																		
General Surgery Operating Room	485	3	1455	0	1455	4	1940	0	1940	5	2425	0	2425	6	2910	0	2910	Outpatient data
Special Operating Rooms	675	1	675	0	675	1	675	0	675	1	675	0	675	1	675	0	675	
Ortho Storage Area	120	1	120	0	120	1	120	0	120	1	120	0	120	1	120	0	120	
Medication Storage Area	60	1	60	0	60	1	60	0	60	1	60	0	60	1	60	0	60	1 per 4 ORs
Substerial Area	150	2	300	0	300	2	300	0	300	3	450	0	450	3	450	0	450	One per 2 ORs
Sterial Core	750	1	750	0	750	1	750	200	950	1	750	400	750	1	750	1600	750	750 nsf if 4 ORs and 400 nsf per 2ORs
Decontamination/Clean-up Area	120	2	240	0	240	2	240	0	240	3	360	0	360	3	360	0	360	One per 2 ORs
Surgical Suite Nurses Station	120	1	120	0	120	1	120	0	120	1	120	0	120	2	240	0	240	One per 4 ORs
Mobile Rad Storage unit	40	1	40	0	40	1	40	0	40	1	40	0	40	1	40	0	40	One per mobile rad unit
Mobile C-Arm Storage	40	1	40	0	40	1	40	0	40	1	40	0	40	1	40	0	40	One per mobile C-arm unit
X-Ray Film Processing	100	0	0	0	0	1	100	0	100	1	100	0	100	1	100	0	100	Authorized if > 4 ORs
Equipment Storage Area	250	1	250	75	325	1	250	150	400	1	250	225	250	1	250	300	250	Add 75 nsf for each additional OR greater than 3
Crash Storage	40	1	40	0	40	1	40	0	40	1	40	0	40	2	80	0	80	One per 4 ORs
Cart Lift Access	100	1	100	0	100	1	100	0	100	1	100	0	100	1	100	0	100	One per OR suite
Clean Storage Work Area	150	1	150	0	150	1	150	0	150	1	150	0	150	1	150	0	150	One per OR Suite
Clean Linen Storage	50	1	50	0	50	1	50	0	50	1	50	0	50	2	100	0	100	50 nsf per 4 ORs
Trash/Solids/ Linen	75	4	300	0	300	5	125	0	125	6	150	0	150	7	175	0	175	25 nsf per OR, Maximum 250 nsf
Janitors Closet	60	1	60	0	60	1	60	0	60	1	60	0	60	2	120	0	120	One per 4 ORs
Housekeeping Equipment Supply	100	1	100	0	100	1	100	0	100	1	100	0	100	2	200	0	200	One per every 4 ORs
Gurney Storage	20	4	80	0	80	5	100	0	100	6	120	0	120	7	140	0	140	One per OR
Nurse Areas	70	2	140	0	140	3	210	0	210	3	210	0	210	3	210	0	210	1 per 3 ORs Includes 2 double units
PACU (4.4)																		
Recovery Room, Phase I	120	4	480	0	480	5	600	0	600	6	720	0	720	7	840	0	840	1 recovery bed per an OR
Nourishment Center	100	1	100	0	100	1	100	0	100	1	100	0	100	1	100	0	100	
Patient Toilet, Phase I	60	1	60	0	60	1	60	0	60	1	60	0	60	1	60	0	60	1 per 20 beds
Patient Toilet, Phase II	60	1	60	0	60	1	60	0	60	2	120	0	120	2	120	0	120	1 per first ten or 1 male and 1 female
Recovery Cubicle, Phase II	120	8	960	0	960	10	1200	0	1200	12	1440	0	1440	14	1680	0	1680	120 nsf (480 minimum for each unit or bed.
Isolation Room	120	1	120	0	120	1	120	0	120	1	120	0	120	1	120	0	120	1 per unit (may delete or decrease)
Isolation Toilet	50	1	50	0	50	1	50	0	50	1	50	0	50	1	50	0	50	1 per isolation room
PACU Nursing Station	120	1	120	0	120	1	120	0	120	1	120	0	120	1	120	0	120	1 per PACU
Toilet for staff	60	1	60	0	60	1	60	0	60	1	60	0	60	1	60	0	60	1 per PACU
Medprep	60	0	0	0	0	0	0	0	0	0	0	0	0	1	60	0	60	
Crash Cart	40	1	40	0	40	1	40	0	40	1	40	0	40	1	40	0	40	Includes space for 2 crash carts per recovery room
Ice Machine	10	1	10	0	10	1	10	0	10	1	10	0	10	1	10	0	10	One per PACU
Clean Supply	10	12	120		120	15		0	0	18	180	0	180	21	210	0	210	10 nsf per bed Maximum of 100 nsf and max of 200 nsf
Soiled Utility	60	1	60	0	60	1	60	0	60	1	60	0	60	1	60	0	60	1 per PACU
Trash/Soiled Linen	5	12	60	0	60	15	75	0	75	18	90	0	90	21	105	0	105	5 nsf per bed. maximum of 50 nsf
Nurse Supervisor/Recovery Room	120	1	120	0	120	1	120	0	120	1	120	0	120	1	120	0	120	1 if an FTE is authorized
Physician Workroom	120	0	0	0	0	1	120	0	120	1	120	0	120	1	120	0	120	1 if more than 4 ORs
Consultation Room	120	1	120	0	120	1	120	0	120	1	120	0	120	1	120	0	120	per 20 beds or fraction thereof
Staff Locker Rooms	100	1	100	140	240	1	100	168	268	1	100	196	196	1	100	224	196	Add 7 nsf for each FTE over 8 each
Staff Toilets, single occupancy	60	2	120	0	120	2	120	0	120	2	120	0	120	2	120	0	120	Increase by one for each additional 15 FTEs
Staff Shower	60	2	120	0	120	2	120	0	120	2	120	0	120	2	120	0	120	Increase by one for each additional 15 FTEs
Staff Lounge	140	1	140	100	240	1	140	120	260	1	140	140	140	1	140	160	140	Add 5 nsf for each programmed FTE over 8
Nurses Workstation	120	4	480	640	1120	4	480	720	1200	4	480	960	960	4	480	880	480	Maximum of 320. Then add 60 nsf for each nurse above 4 assigned
Splint and Crutch Storage	60	1	60	0	60	1	60	0	60	1	60	0	60	1	60	0	60	One per PACU
Equipment Storage	80	4	160	0	160	5	200	0	200	6	240	0	240	7	280	0	280	1 per OR
Janitors Closet	60	4	240	0	240	5	300	0	300	6	360	0	360	7	420	0	420	1 per OR
SURGICAL SITE ADMINISTRATIVE AREAS																		
Conference Room	200	1	200	0	200	1	200	0	200	1	200	0	200	1	200	0	200	
Nurses Workroom	120	1	120	160	280	1	120	240	360	1	120	280	120	1	120	320	440	Add 40 nsf for each nurse above 4 assigned
Clerical/Secretary	60	2	120	0	120	2	120	0	120	3	180	0	180	3	180	0	180	One per Clerk
Dictation Area	100	1	100	0	100	1	100	0	100	1	100	0	100	2	200	0	200	One per every 4 ORs
Nurse Supervisors Office	120	1	120	0	120	1	120	0	120	1	120	0	120	2	240	0	240	
Equipment Workroom	100	0	0	0	0	0	0	0	0	0	0	0	0	1	100	0	100	Only authorized if 1 FTE Biomedical Equipment Repairman is assigned
NCOIC Office	120	1	120	0	120	1	120	0	120	1	120	0	120	1	120	0	120	One Per Facility/Department
Reproduction room	100	1	100	0	100	1	100	0	100	1	100	0	100	1	100	0	100	For fax mail, photocopier
Administrative Officer	120	1	120	0	120	1	120	0	120	1	120	0	120	1	120	0	120	One per FTE
Sub-Total - Net Square Feet					17,145				20,155				21,830				25,195	
Net-to-DGSF Ratio	1.9				52.5%				58.2%				61.4%				68.4%	
TOTAL DEPARTMENT GROSS SQUARE FEET					69,721				58,444				63,378				73,936	
Cost of each COA					$14,916,150				$17,533,110				$18,983,400				22,180,650	$300 per nsf to estimate appropriate cost

Appendix S

Standalone Ambulatory Surgical Center (Page 2)

Estimated Facility Costs

Stand-alone facility costs:	Building Cost	Design Cost (10%)	Total Cost	Communication (10%)	Outfitting Expense (20%)	Displacement (15%)	Final Planning Cost
4 ORs	$14,916,150	$1,491,615	**$16,407,765**	$1,491,615	2,983,230	2,237,423	**$23,120,033**
5 ORs	$17,533,110	$1,753,311	**$19,286,421**	$1,753,311	3,506,622	2,629,967	**$27,176,321**
6 ORs	$18,983,400	$1,898,340	**$20,881,740**	$1,898,340	3,796,680	2,847,510	**$29,424,270**
7 ORs	**$22,180,650**	**$2,218,065**	**$24,398,715**	**$2,218,065**	**4,436,130**	**3,327,098**	**$34,380,008**

Notes:

1) Design costs is based on 10% of construction costs (Source: Michele Pauli, HFS Company, (210) 221-7154)

2) Outfitting expense is 20% (Source: Michele Pauli, HFS Company, (210) 221-7154)

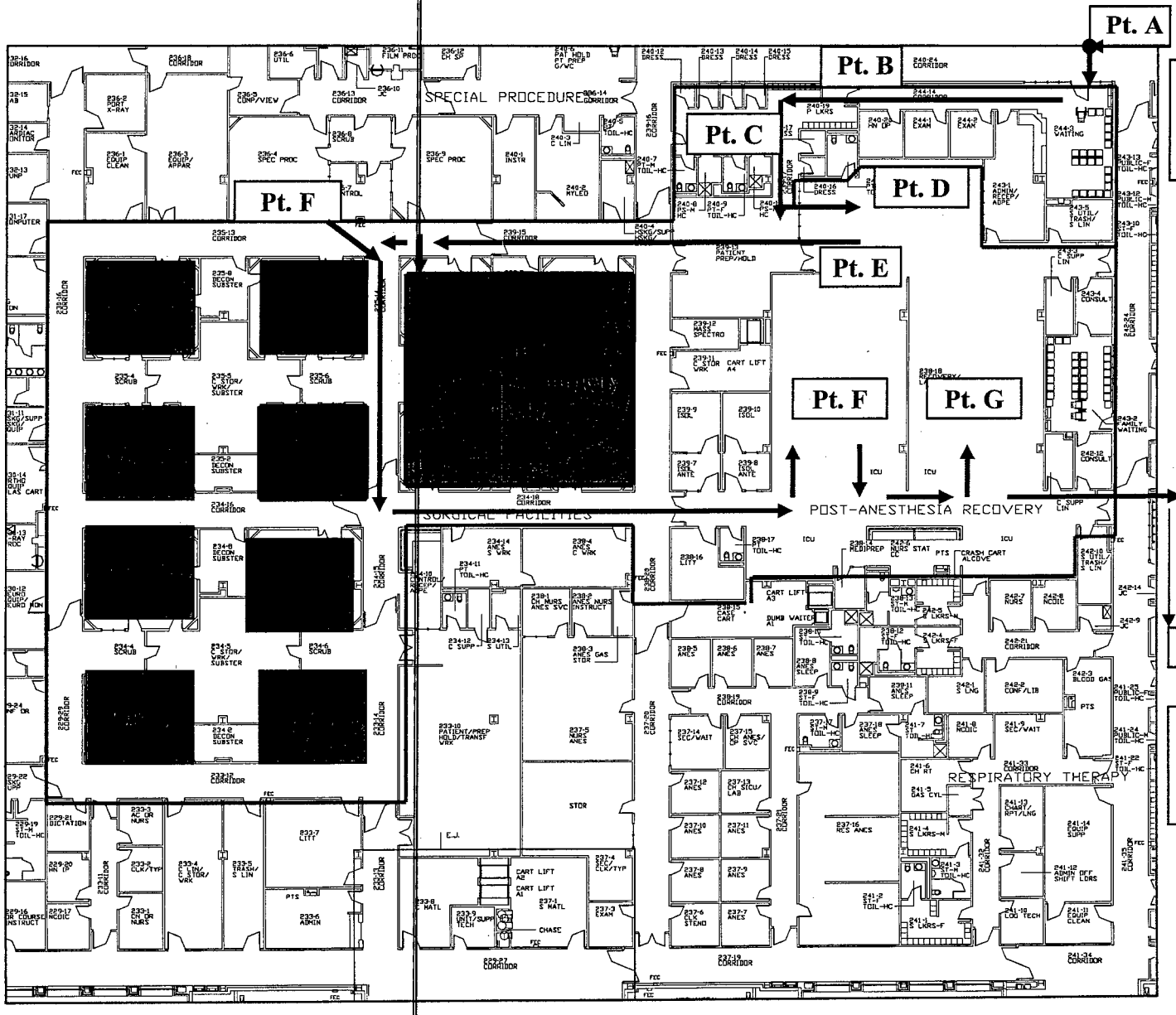
3) Displacement expense is 15% of construction cost. This funding is used to physically move equipment, provide space for a project manager etc. (Source: Michele Pauli, HFS Company, (210) 221-7154)

4) 1 recovery room bed per OR for Phase I

6 ORs -	6	12 (6x2)	18
7 ORs -	7	14 (7x2)	21

Source: DoD Space Planning Criteria and calculations using Health Facility Planning Agency planning factors (percentages)

Notes:
Pt. A - Enter SDS
Pt. B - Vitals/Change
Pt. C - Sit-in Chair
Pt. D - Lie in gunnery, wait to be taken to OR
Pt. E - Taken to OR
Pt is taken to Core C
Pt. F - Taken from OR to Phase I recovery
Pt. G - Taken from Phase I recovery to Phase II recovery
Pt. H - Discharged



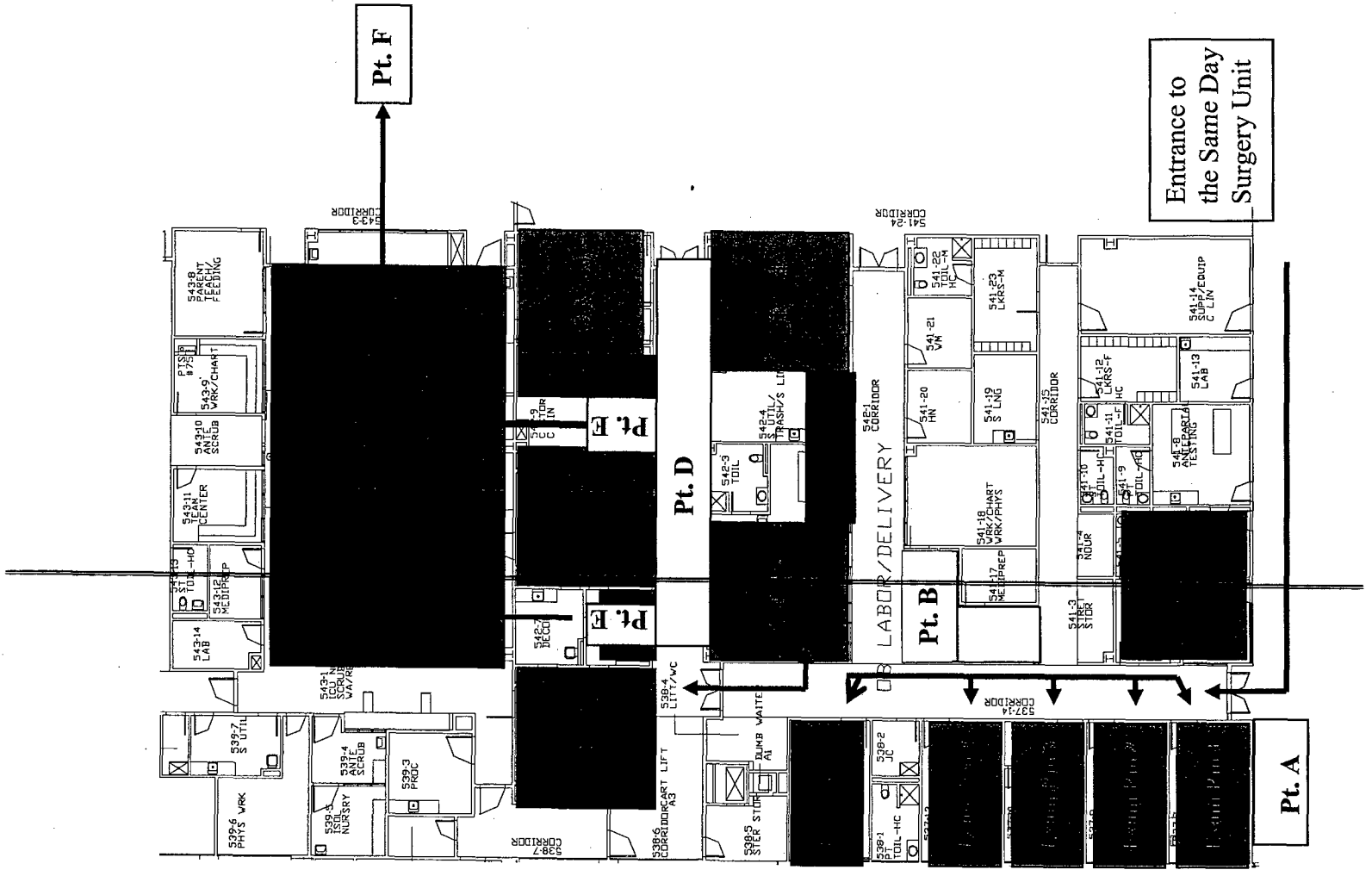
Entrance to the Same Day Surgery Unit

Physical Layout for COA 2

Patient is discharged from Phase II

Appendix U

Physical Layout for COAs 5 & 6



5th Floor – SDS Center

-UBO becomes the recovery room area

-Build an additional 4 ORs (yellow box)

-Construct 2 additional Scrub areas

-Increase the waiting room area

Notes:

Pt. A - Enter SDS

Pt. B - Vitals/Change

Pt. C - Sit-in Chair

Pt. D - Taken to OR

Pt E - Taken from OR to recovery

Pt. F - Discharged

Appendix V

Calculation of Marginal Supply Cost (Page 1)

Ambulatory Care Unit and Anesthesia Supply Costs

DGAA - Ambulatory Care Unit	Description (DIRECT EXPENSE)		Direct Expense Net Month
SAME DAY SERVICES AMBULATORY CARE UNIT	MED/DENT SUPPLIES	DHP, Ops & Mnt.	$2,539.80
			$2,539.80
	FY2004 ACU Supply Co	$2,539.80	
	FY2004 Work Load	7044	
	Average Cost Per Cas	**$0.36**	

DFAA - Anesthesia	Description (DIRECT EXPENSE)		Direct Expense Net Month
SURGICAL SERVICES ANESTHESIA/PRE OP HOLD	MED/DENT SUPPLIES	DHP, Ops & Mnt.	$635,459.78
SURGICAL SERVICES ANESTHESIA/PRE OP HOLD	PHARM SUPPLIES	DHP, Ops & Mnt.	$118,703.12
			$754,162.90
FY2004 Anesthesia Supply Cost	$754,162.90		
% of workload attributed to same-day surgery	26.81%		
% of FY2004 Supply Costs attributed to Anesthesia	$202,191.07		

FY2004 Anesthesia Supply Cost by Service:

Service	Weight	% of Total Weights	Anesthesia Supply Costs	Number of Visits	Cost Per APV
Ortho	63,561.00	16.74%	$33,846.79	482	$70.22
GYN	58,617.00	15.44%	$31,218.30	555	$56.25
Vascular	8,911.00	2.35%	$4,751.49	65	$73.10
Urology	30,306.00	7.98%	$16,134.85	249	$64.80
Plastic Surgery	18,240.00	4.81%	$9,725.39	81	$120.07
Otolaryngology	53,518.00	14.10%	$28,508.94	562	$50.73
Opthmology	78,059.00	20.56%	$41,570.48	956	$43.48
Neurosurgery	2,608.00	0.69%	$1,395.12	19	$73.43
Cardiovascular	1,086.00	0.29%	$586.35	7	$83.76
General Surgery	64,686.00	17.04%	$34,453.36	564	$61.09
Total	379,592.00	100.00%		3540	$57.12

Appendix V

Calculation of Marginal Supply Cost (Page 2)

FY 2004 Operating Room and PACU Supply Costs

DFBA - Operating Room			Description (DIRECT EXPENSE)		Direct Expense Net Month
SURGICAL SERVICES	SURGICAL SUITE	26.15	MED/DENT SUPPLIES	DHP, Ops & Mnt.	$13,196,975.86
SURGICAL SERVICES	SURGICAL SUITE	26.2	OTHER SUPPLIES	DHP, Ops & Mnt.	$1,758.12
SURGICAL SERVICES	SURGICAL SUITE	26.25	PHARM SUPPLIES	DHP, Ops & Mnt.	$50,556.46
					$13,249,290.44

FY2004 OR Supply Cost	$13,249,290.44
% of weighted workload attributed to same-day surgery	27.42%
% of FY2004 Supply Costs attributed to OR	$3,632,955.44

FY2004 OR Supply Cost by Service:

Service	Weight	% of Total Weights	OR Supply Costs	Number of Visits	Cost Per APV
Ortho	139,848.00	17.33%	$629,591.18	482	$1,306.21
GYN	135,550.00	16.80%	$610,336.51	555	$1,099.71
Vascular	19,651.00	2.44%	$88,644.11	65	$1,363.76
Urology	25,092.00	3.11%	$112,984.91	249	$453.75
Plastic Surgery	40,820.00	5.06%	$183,827.55	81	$2,269.48
Otolaryngology	119,298.00	14.78%	$536,950.81	562	$955.43
Opthmology	170,400.00	21.12%	$767,280.19	956	$802.59
Neurosurgery	6,366.00	0.79%	$28,700.35	19	$1,510.54
Cardiovascular	2,240.00	0.28%	$10,172.28	6	$1,695.38
General Surgery	147,708.00	18.30%	$664,830.85	565	$1,176.69
Total	806,973.00	100.01%	$3,633,318.73	$3,540.00	$1,026.36

DFCA - PACU			Description (DIRECT EXPENSE)		Direct Expense Net Month
SURGICAL SERVICES	RECOVERY ROOM	26.15	MED/DENT SUPPLIES	DHP, Ops & Mnt.	$77,164.42
SURGICAL SERVICES	RECOVERY ROOM	26.2	OTHER SUPPLIES	DHP, Ops & Mnt.	$2,635.18
SURGICAL SERVICES	RECOVERY ROOM	26.25	PHARM SUPPLIES	DHP, Ops & Mnt.	$3,515.26
					$83,314.86

FY2004 PACU Supply Cost	$83,314.86
% of weighted workload attributed to same-day surgery	36.39%
% of FY2004 Supply Costs attributed to OR	$30,318.28

FY2004 PACU Supply Cost by Service:

Service	Weight	% of Total Weights	PACU Supply Costs	Number of Visits	Cost Per APV
Ortho	39,494.00	17.97%	$5,448.19	407	$13.39
GYN	40,196.00	18.29%	$5,545.21	412	$13.46
Vascular	5,012.00	2.28%	$691.26	129	$5.36
Urology	26,061.00	11.86%	$3,595.75	222	$16.20
Plastic Surgery	9,553.00	4.35%	$1,318.85	167	$7.90
Otolaryngology	39,305.00	17.88%	$5,420.91	406	$13.35
Opthomology	5,344.00	2.43%	$736.73	184	$4.00
Neurosurgery	2,273.00	1.03%	$312.28	63	$4.96
Cardiovascular	1,796.00	0.82%	$248.61	7	$35.52
General Surgery	50,784.00	23.10%	$7,003.52	471	$14.87
Total	219,818.00	100.01%	$30,321.31	2468	$12.29

Appendix V

Calculation of Marginal Supply Cost (Page 3)

FY 2004 Total Supply Cost by Service & Average Supply Costs

FY2004 Marginal Supply Costs by Service:

Service	Ambulatory Care	Anesthesia	Operating Room	PACU	Total Cost Per Unit Per Service
Ortho	$0.36	$70.22	$1,306.21	$13.39	$1,390.17
GYN	$0.36	$56.25	$1,099.71	$13.46	$1,169.77
Vascular	$0.36	$73.10	$1,363.76	$5.36	$1,442.57
Urology	$0.36	$64.80	$453.75	$16.20	$535.11
Plastic Surgery	$0.36	$120.07	$2,269.48	$7.90	$2,397.80
Otolaryngology	$0.36	$50.73	$955.43	$13.35	$1,019.87
Opthomology	$0.36	$43.48	$802.59	$4.00	$850.44
Neurosurgery	$0.36	$73.43	$1,510.54	$4.96	$1,589.29
Cardiovascular	$0.36	$83.76	$1,695.38	$35.52	$1,815.02
General Surgery	$0.36	$61.09	$1,176.69	$14.87	$1,253.01

FY2004 Marginal Supply Costs by Service:

Service	Ambulatory Care	Anesthesia	Operating Room	PACU	Total Cost Per Unit Per Service
Average Supply Cost	$0.36	$57.12	$1,026.36	$12.29	$1,096.12

Appendix W

Medical Equipment Requirements & Costs for COA 5 and 6 (Page 1)

Anesthesia Equipment and Total Cost

Short Description	Required Quantity	Unit of Issue	Total Cost per Unit	Total Quantity (6 ORs)	Total Cost
Anesthesia Machine	1	per OR	$46,000.00	6	$276,000.00
Fluid warming unit	1	per OR	$2,500.00	6	$15,000.00
Patient warming unit	1	per OR	$4,500.00	6	$27,000.00
Preasure infusior unit	2	each	$8,500.00	2	$17,000.00
Nerve Stimulator	1	per OR	$200.00	6	$1,200.00
Syringe pump	1	per OR	$3,500.00	6	$21,000.00
Patient monitoring system	1	per OR	$34,444.00	6	$206,664.00
Anesthesia supply carts	1	per OR	$1,100.00	6	$6,600.00
Anesthesia supply carts restock	0.5	per OR	$1,100.00	3	$3,300.00
					$573,764.00

PACU Equipment and Total Cost

Short Description	Rqd Qty	Unit of Issue	Equipment Cost	Maintenance Cost 7%	Installation Fee	Total Cost per Unit	Total Quantity (18 bays)	Total Cost
PORTABLE DOPPLER	2	each	$726.86	$50.88	$0.00	$777.74	2	$1,555.48
RECOVERY CHAIR	2	per bay	$846.60	$59.26	$0.00	$905.86	2	$1,811.72
STRETCHER	2	per bay	$4,505.00	$315.35	$0.00	$4,820.35	18	$86,766.30
ELECTRONIC THERMOMETER	3	each	$360.00	$25.20	$0.00	$385.20	3	$1,155.60
DEFIBRILLATOR	2	each	$7,379.00	$516.53	$0.00	$7,895.53	2	$15,791.06
COMPRESSION PUMP	1	per bay	$1,800.00	$126.00	$0.00	$1,926.00	18	$34,668.00
EKG MACHINE	2	each	$8,662.50	$606.38	$0.00	$9,268.88	2	$18,537.75
PORTABLE SUCTION	2	each	$752.00	$52.64	$0.00	$804.64	2	$1,609.28
PULSE OX	2	each	$2,353.13	$164.72	$0.00	$2,517.85	2	$5,035.70
PHILLIPS MONITOR SYSTEM	1	per bay	$19,615.00	$1,373.05	$1,000.00	$21,988.05	18	$395,784.90
FLAT SCREEN MONITOR	2	each	$3,296.00	$230.72	$0.00	$3,526.72	2	$7,053.44
PHILLIPS KEYBOARD	1	each	$1,422.00	$99.54	$0.00	$1,521.54	1	$1,521.54
BEDSIDE MONITOR RACK	1	per bay	$446.00	$31.22	$0.00	$477.22	18	$8,589.96
PHILIPS MONITOR ALARM	1	per bay	$940.00	$65.80	$0.00	$1,005.80	18	$18,104.40
PHILIPS SERVER	1	each	$43,000.00	$3,010.00	$5,000.00	$51,010.00	1	$51,010.00
EKG STRIP PRINTER	1	each	$1,872.00	$131.04	$0.00	$2,003.04	1	$2,003.04
POWER BACKUP	1	each	$2,500.00	$175.00	$0.00	$2,675.00	1	$2,675.00
BAIR HUGGER	2	each	$890.00	$62.30	$0.00	$952.30	2	$1,904.60
BP CUFF	1	per bay	$100.00	$7.00	$0.00	$107.00	18	$1,926.00
COPIER	1	each	$5,200.00	$364.00	$0.00	$5,564.00	1	$5,564.00
SCALE	1	each	$1,957.00	$136.99	$0.00	$2,093.99	1	$2,093.99
BLANKET WARMER	1	each	$3,199.00	$223.93	$1,000.00	$4,422.93	1	$4,422.93
PYXIS	1	each	$13,866.47	$970.65	$1,000.00	$15,837.12	1	$15,837.12
PYXIS	1	each	$9,819.39	$687.36	$1,000.00	$11,506.75	1	$11,506.75
IV PUMPS	1	per bay	$2,195.00	$153.65	$0.00	$2,348.65	18	$42,275.70
BLOOD SUGAR	1	each	$1,274.30	$89.20	$0.00	$1,363.50	1	$1,363.50
SUPPLY CARTS	10	each	$1,500.00	$105.00	$0.00	$1,605.00	10	$16,050.00
BEDSIDE TABLE	1	per bay	$300.00	$21.00	$0.00	$321.00	18	$5,778.00
								$762,395.76

Appendix W

Medical Equipment Requirements & Costs for COA 5 and 6 (Page 2)

Operating Rooms

Short Description	Unit of Issue	Equipment Cost	Maintenance Cost 0.07%	Installation Fee	Total Cost per Unit	Total Quantity (5 ORs/15 bays)	Total Cost
Table with attachments (2 each armboards, 2 each hand table, head and foot extension, safety straps	each	$31,746.43	$2,222.25	N/A	$33,968.68	4	$135,874.72
ESU - Electrosurgical Unit and ground pads and smoke evacuation	each	$5,460.00	$382.20	N/A	$5,842.20	4	$23,368.80
Double ring stand and single	each	$300.00	$21.00	N/A	$321.00	4	$1,284.00
Mayo stand	each	$200.00	$14.00	N/A	$214.00	4	$856.00
Computer for charting (Essentris/WinCIS)	each	$5,000.00	$350.00	N/A	$5,350.00	4	$21,400.00
Computer for X-Ray visualization	each	$5,000.00	$350.00	N/A	$5,350.00	4	$21,400.00
Stools - sitting	each	$200.00	$14.00	N/A	$214.00	4	$856.00
Stools - rolling	each	$300.00	$21.00	N/A	$321.00	4	$1,284.00
Step stools	each	$100.00	$7.00	N/A	$107.00	4	$428.00
Head Lights and replacement Bulbs	each	$3,347.95	$234.36	N/A	$3,582.31	4	$14,329.23
Portable Headlight Harness/Light Source	each	$3,347.95	$234.36	N/A	$3,582.31	4	$14,329.23
Video Tower (Olympus) with Accessories (Camera/Printer/Lightsource)	each	$113,402.50	$7,938.18	N/A	$121,340.68	4	$485,362.70
Storage Carts for Service Supplies	each	$500.00	$35.00	N/A	$535.00	4	$2,140.00
Crash Cart	each	$2,000.00	$140.00	N/A	$2,140.00	4	$8,560.00
Tourniquet Box with Supplies	each	$5,645.00	$395.15	N/A	$6,040.15	4	$24,160.60
Roller Board for Patient Transport	each	$199.00	$13.93	N/A	$212.93	4	$851.72
Pillows for positioning	each	$4.08	$0.29	N/A	$4.37	4	$17.46
Head Donut for Positioning	each	$80.00	$5.60	N/A	$85.60	4	$342.40
Egg Crateform for Positioning	each	$3.48	$0.24	N/A	$3.72	4	$14.89
Warmer	each	$3,199.00	$223.93	N/A	$3,422.93	4	$13,691.72
Suture Cart	each	$241.00	$16.87	N/A	$257.87	4	$1,031.48
Mitrogen Hose - Long	each	$70.00	$4.90	N/A	$74.90	4	$299.60
Mitrogen Hose - Short	each	$50.00	$3.50	N/A	$53.50	4	$214.00
Fibrin Glue Machine	each	$300.00	$21.00	N/A	$321.00	2	$642.00
Adressograph Machine	each	$581.08	$40.68	N/A	$621.76	4	$2,487.02
					TOTAL ESTIMATED COST FOR FOUR ORS		$775,225.57

Appendix W

Medical Equipment Requirements & Costs for COA 5 and 6 (Page 3)

Specialty Medical Equipment – Orthopedics

Short Description	Unit of Issue	Equipment Cost Per Mr. Woods	Maintenance Cost 0.07%	Installation Fee	Total Cost per Unit	Total Quantity (5 ORs/15 bays)	Total Cost
Ortho Towers	each	$113,402.50	$7,938.18	N/A	$121,340.68	1	$121,340.68
Flat Top Bed/OSI Fracture Table	each	$150,000.00	$10,500.00	N/A	$160,500.00	1	$160,500.00
Beech Chair (shoulder)	each	$5,845.00	$409.15	N/A	$6,254.15	1	$6,254.15
GEI Pads	each	$498.00	$34.86	N/A	$532.86	1	$532.86
Hand Table	each	$1,500.00	$105.00	N/A	$1,605.00	1	$1,605.00
Lateral Post (Knee Positioning)	each	$1,500.00	$105.00	N/A	$1,605.00	1	$1,605.00
FMS Pump and Attachment for Foot Pedals	each	$9,500.00	$665.00	N/A	$10,165.00	1	$10,165.00
Blue Irrigation Tower (Holds 3L Saline Bags)	each	$2,500.00	$175.00	N/A	$2,675.00	1	$2,675.00
10lb Sand Bag	each	$200.00	$14.00	N/A	$214.00	1	$214.00
Mini C-Arm	each	$217,242.00	$15,206.94	N/A	$232,448.94	1	$232,448.94
X-Ray Shilds	each	$4,000.00	$280.00	N/A	$4,280.00	1	$4,280.00
TOTAL ESTIMATED COST FOR FOUR ORS							**$541,620.63**

Specialty Medical Equipment – General Surgery

Short Description	Unit of Issue	Equipment Cost Per Mr. Woods	Maintenance Cost 0.07%	Installation Fee	Total Cost per Unit	Total Quantity (5 ORs/15 bays)	Total Cost
Olympus Tower	each	$113,402.50	$7,938.18	N/A	$121,340.68	1	$121,340.68
Secondary Tower	each	$113,402.50	$7,938.18	N/A	$121,340.68	1	$121,340.68
Mesh Cart (Hernias)	each	$20,000.00	$1,400.00	N/A	$21,400.00	1	$21,400.00
TOTAL ESTIMATED COST FOR FOUR ORS							**$264,081.35**

Specialty Medical Equipment – Gynecology Surgery

Short Description	Unit of Issue	Equipment Cost Per Mr. Woods	Maintenance Cost 0.07%	Installation Fee	Total Cost per Unit	Total Quantity (5 ORs/15 bays)	Total Cost
Olympus Tower	each	$113,402.50	$7,938.18	N/A	$121,340.68	1	$121,340.68
Secondary Tower	each	$113,402.50	$7,938.18	N/A	$121,340.68	1	$121,340.68
Aquasense/Hydroflow Machine	each	$10,500.00	$735.00	N/A	$11,235.00	1	$11,235.00
D&C Suction Machine	each	$1,000.00	$70.00	N/A	$1,070.00	1	$1,070.00
TOTAL ESTIMATED COST FOR FOUR ORS							**$254,986.35**

Specialty Medical Equipment – Plastic Surgery

Short Description	Unit of Issue	Equipment Cost Per Mr. Woods	Maintenance Cost 0.07%	Installation Fee	Total Cost per Unit	Total Quantity (5 ORs/15 bays)	Total Cost
Liposuction Machine	each	$7,000.00	$490.00	N/A	$7,490.00	1	$7,490.00
TOTAL ESTIMATED COST FOR FOUR ORS							**$7,490.00**

Appendix W

Medical Equipment Requirements & Costs for COA 5 and 6 (Page 4)

Specialty Medical Equipment – Orthopedics

Short Description	Unit of Issue	Equipment Cost Per Mr. Woods	Maintenance Cost 0.07%	Installation Fee	Total Cost per Unit	Total Quantity (5 ORs/15 bays)	Total Cost
Phaco Machine (Infiniti)	each	$79,000.00	$5,530.00	N/A	$84,530.00	1	$84,530.00
Eye Bed	each	$10,000.00	$700.00	N/A	$10,700.00	1	$10,700.00
Air Wand	each	$300.00	$21.00	N/A	$321.00	1	$321.00
Microscope (Zeiss)	each	$4,500.00	$315.00	N/A	$4,815.00	1	$4,815.00
Eye Sitting Stools	each	$300.00	$21.00	N/A	$321.00	1	$321.00
TOTAL ESTIMATED COST FOR FOUR ORS							$100,687.00

Specialty Medical Equipment – ENT

Short Description	Unit of Issue	Equipment Cost Per Mr. Woods	Maintenance Cost 0.07%	Installation Fee	Total Cost per Unit	Total Quantity (5 ORs/15 bays)	Total Cost
Bronchoscopy Cart	each	$2,000.00	$140.00	N/A	$2,140.00	1	$2,140.00
ENT Microscope	each	$70,000.00	$4,900.00	N/A	$74,900.00	1	$74,900.00
ENT Tower	each	$113,402.50	$7,938.18	N/A	$121,340.68	1	$121,340.68
TOTAL ESTIMATED COST FOR FOUR ORS							$198,380.68

Specialty Medical Equipment - Vascular

Short Description	Unit of Issue	Equipment Cost Per Mr. Woods	Maintenance Cost 0.07%	Installation Fee	Total Cost per Unit	Total Quantity (5 ORs/15 bays)	Total Cost
Vascular Bed	each	$25,000.00	$1,750.00	N/A	$26,750.00	1	$26,750.00
Doppler Machine with Cord/Gel	each	$4,500.00	$315.00	N/A	$4,815.00	1	$4,815.00
Vascular Tower	each	$113,402.50	$7,938.18	N/A	$121,340.68	1	$121,340.68
TOTAL ESTIMATED COST FOR FOUR ORS							$152,905.68

Specialty Medical Equipment – Cardio Thoracic

Short Description	Unit of Issue	Equipment Cost Per Mr. Woods	Maintenance Cost 0.07%	Installation Fee	Total Cost per Unit	Total Quantity (5 ORs/15 bays)	Total Cost
CT Tower	each	$113,402.50	$7,938.18	N/A	$121,340.68	1	$121,340.68
TOTAL ESTIMATED COST FOR FOUR ORS							$121,340.68

Appendix W

Medical Equipment Requirements & Costs for COA 5 and 6 (Page 5)

Specialty Medical Equipment – Neurosurgery

Short Description	Unit of Issue	Equipment Cost Per Mr. Woods	Maintenance Cost 0.07%	Installation Fee	Total Cost per Unit	Total Quantity (5 ORs/15 bays)	Total Cost
Malis Irrigating Bipolar Machine	each	$20,000.00	$1,400.00	N/A	$21,400.00	1	$21,400.00
Fluid Warmer Machine	each	$6,150.00	$430.50	N/A	$6,580.50	1	$6,580.50
Large C-Arm and Shileds	each	$217,242.00	$15,206.94	N/A	$232,448.94	1	$232,448.94
TOTAL ESTIMATED COST FOR FOUR ORS							**$260,429.44**

#REF!
#REF!

Performance & Financial Summary *Linked areas of This section are automatically updated as you complete the rest of the BCA*

Recapture Targets (Workload)

	36-Mo Total	Year 1	Year 2	Year 3	Year 4
ADMISSIONS					
Supp Care (AD)		0	0	0	0
CHAMPUS (All)		0	0	0	0
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	0	0	0	0	0
CLINIC VISITS					
Supp Care (AD)		0	0	0	0
CHAMPUS (All)		0	0	0	0
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	0	0	0	0	0
SURG. PROCEDURES					
Supp Care (AD)		0	0	0	0
CHAMPUS		2,169	2,169	2,169	2,169
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	8,676	2,169	2,169	2,169	2,169

ENTER Projected Start Date: 1-Oct-06

Payback Period (Breakeven): 0.0 Years or 0 Months

Projected Payback Date: Exceeds 36 Months

What is the project buying?

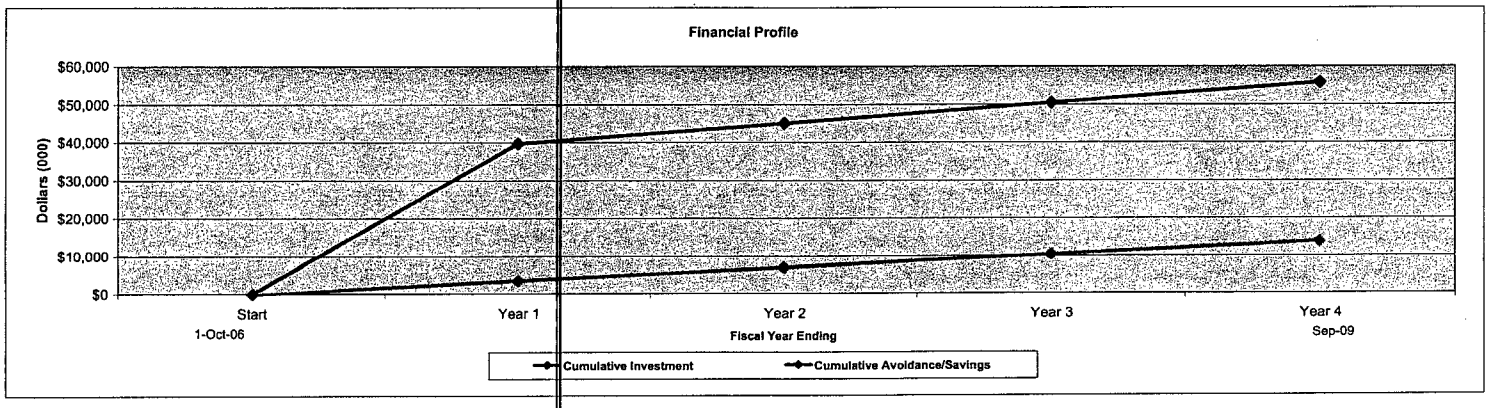
Provide a short description of what this initiative is purchasing i.e.
number and types of staff
number and types of providers
number and description of equipment
number and types of supplies

Non-Inflated

Net Savings & Loss Calculations ($000)

			Year 1	Year 2	Year 3	Year 4	36-Month Program Total <— = 36 Months
Benefit to Investment Ratio (BIR) value <1 is a Negative ROI	Net Present Value (NPV)	Personnel (Linked)	2,963.0	2,963.0	2,963.0	2,963.0	
		Travel (Linked)	0.0	0.0	0.0	0.0	
		Leases/Rents (Linked)	0.0	0.0	0.0	0.0	
		Capital Contracts (Linked)	0.0	0.0	0.0	0.0	
		Marg. Supplies (Linked)	2,377.2	2,377.2	2,377.2	2,377.2	
	Total Investment OUTFLOW	Equipment (Linked)	6,654.2	0.0	0.0	0.0	
		Facility Mod (Linked)	27,725.8	0.0	0.0	0.0	
		Misc. (Linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	Outflow Total
0.24	$55,241.4	Requirement	39,720.2	5,340.2	5,340.2	5,340.2	$55,740.7
	Benefits Cost Avoidance	TNEX - RF ADD (Linked)	1,117.7	3,249.9	3,249.9	3,249.9	
		TNEX - RF NADD (Linked)	0.0	0.0	0.0	0.0	
		CHAMPUS A&O (linked)	0.0	0.0	0.0	0.0	
		TFL > 65 (linked)	0.0	0.0	0.0	0.0	
		Supp Care (linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	
	$10,563.5	Cost Avoidance	1,117.7	3,249.9	3,249.9	3,249.9	
	Benefits PSC Savings	TNEX - RF ADD (Linked)	2,132.1	0.0	0.0	0.0	
		TNEX - RF NADD (Linked)	0.0	0.0	0.0	0.0	
		CHAMPUS A&O (linked)	0.0	0.0	0.0	0.0	
		TFL > 65 (linked)	0.0	0.0	0.0	0.0	
		Supp Care (linked)	0.0	0.0	0.0	0.0	
Discount Factor	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	
1.60%	$2,132.1	PSC Cost Savings	2,132.1	0.0	0.0	0.0	
	Benefits Direct to MTF	3rd Party Collect. (linked)	195.0	195.0	195.0	195.0	
		Other (Not Linked)	0.0	0.0	0.0	0.0	
		Other (Not Linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	Inflow Total
	$761.7	Direct MTF Savings	195.0	195.0	195.0	195.0	$13,779.4
							36-Mo ROI
Net Savings or (Loss)			(36,275.3)	(1,895.3)	(1,895.3)	(1,895.3)	($41,961.3)
Venture Capital Funding Requirement			39,525.2	5,145.2	5,145.2	5,145.2	$54,960.8

	Year 1	Year 2	Year 3	Year 4
Cumulative Investment	39,720.2	45,060.4	50,400.5	55,740.7
Cumulative Avoidance/Savings	3,444.8	6,889.7	10,334.5	13,779.4
Cumulative Net Savings or (Loss)	(36,275.3)	(38,170.7)	(40,066.0)	(41,961.3)



Appendix X

Quad Sheet

Change in Workload in the MTF				
Enter Fiscal Year (FY__) in each column	Year 1	Year 2	Year 3	Year 4
Enter the Number of Month for each FY activities are expected to occur				
Workload SHIFT Avoidance - Work that will move to the network if BCA is not put in place All MCSC 1.0 Activities & For All "Non-Psych" Workload for MCSC 2.0 Activities				
Ambulatory Surgery Cases (APVs)	746	2169	2169	2169
Outpatient NADD Visits/SDS				
Total CHAMPUS Visits	746	2169	2169	2169
Outpatient AD Visits/SDS				
Total Outpatient Visits/SDS	746	2169	2169	2169
Inpatient ADD Admissions				
Inpatient NADD Admissions				
Total CHAMPUS Admissions	0	0	0	0
Inpatient AD Admissions				
Total Admissions	0	0	0	0
New Workload - Increase in MTF workload if BCA is put in place (Recapture) All MCSC 1.0 Activities & For All "Non-Psych" Workload for MCSC 2.0 Activities				
Ambulatory Surgery Cases (APVs)	1423			
Outpatient NADD Visits/SDS				
Total CHAMPUS Visits	1423	0	0	0
Outpatient AD Visits/SDS				
Total Outpatient Visits/SDS	1423	0	0	0
Inpatient ADD Admissions				
Inpatient NADD Admissions				
Total CHAMPUS Admissions	0	0	0	0
Inpatient AD Admissions				
Total Admissions	0	0	0	0
Workload SHIFT Avoidance - Work that will move to the network if BCA is not put in place Workload Worksheet for MCSC 2.0 Activities (Psych Workload) Regions 1, 2 & 5 Only				
Outpatient Psych ADD Visits/SDS				
Outpatient Psych NADD Visits/SDS				
Total CHAMPUS Psych Visits	0	0	0	0
Outpatient Psych AD Visits/SDS				
Total Psych Outpatient Visits/SDS	0	0	0	0
Inpatient Psych ADD Admissions				
Inpatient Psych NADD Admissions				
Total CHAMPUS Psych Admissions	0	0	0	0
Inpatient Psych AD Admissions				
Total Psych Admissions	0	0	0	0
New Workload - Increase in MTF workload if BCA is put in place (Recapture) Workload Worksheet for MCSC 2.0 Activities (Psych Workload) Regions 1, 2 & 5 Only				
Outpatient Psych ADD Visits/SDS				
Outpatient Psych NADD Visits/SDS				
Total CHAMPUS Psych Visits	0	0	0	0
Outpatient Psych AD Visits/SDS				
Total Psych Outpatient Visits/SDS	0	0	0	0
Inpatient Psych ADD Admissions				
Inpatient Psych NADD Admissions				
Total CHAMPUS Psych Admissions	0	0	0	0
Inpatient Psych AD Admissions				
Total Psych Admissions	0	0	0	0
Workload for MCSC 2.0 Enrollment Activities Regions 1, 2 & 5 Only				
ADD Enrollments				
NADD Enrollments				
Total Enrollments	0	0	0	0

Personnel Estimates

GS Personnel	Year 1	Year 2	Year 3	Year 4
Number of Provider FTEs	0	0	0	0
GS Cost of Providers	$ -	$ -	$ -	$ -
Number of Support Staff FTEs	0	0	0	0
GS Cost of Support Staff	$ -	$ -	$ -	$ -
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Contract Personnel				
Number of Provider FTEs	1	1	1	1
Contract Cost of Providers	$ 320,000	$ 320,000	$ 320,000	$ 320,000
Number of Support Staff FTEs	45	45	45	45
Contract Cost of Support Staff	$ 2,642,956	$ 2,642,956	$ 2,642,956	$ 2,642,956
Total Contract Cost	$ 2,962,956	$ 2,962,956	$ 2,962,956	$ 2,962,956
Total Personnel Cost	$ 2,962,956	$ 2,962,956	$ 2,962,956	$ 2,962,956

Select Local → RUS

Estimated Benefit % 25%

Instructions

Locality Rate: 10.90%

Local Description: REST OF UNITED STATES

* Note that civilian GS pay rates represent General Schedule pay rates (step 5) plus any locality pay. Additional cost of Benefits are added for all GS employees.

Salary Table 2004-GS **2004 General Schedule Including Locality Pay**

Provider GS Cost					Enter the # of GS Providers FTEs for Each Year			
Description	GS	Step 5 + Benefits	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
Total GS PROVIDER Cost per Year					$ -	$ -	$ -	$ -

Contract Providers				Enter the # of Contract Provider FTEs for Each Year			
Description	Salary	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
Anesthesiologist	$ 320,000	$ -	$ 320,000	1	1	1	1
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
Total CONTRACT PROVIDER Cost per Year				$ 320,000.00	$ 320,000.00	$ 320,000.00	$ 320,000.00

Support Staff GS Cost					Enter the # of GS Support Staff FTEs for Each Year			
Description	GS	Step 5 + Benefits	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
Total GS SUPPORT STAFF Cost per Year					$ -	$ -	$ -	$ -

Contract Support Staff				Enter # of Contract Support Staff FTEs for Each Year			
Description	Salary	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
OR Nurse (8)/CMS Nurse (1)	$ 51,701	$ -	$ 51,701	9	9	9	9
OR Tech (7)/CMS OR Tech (7)	$ 32,037	$ -	$ 32,037	14	14	14	14
Operating Room Scheduler (Clerk)	$ 28,387	$ -	$ 28,387	1	1	1	1
Recovery Room Nurse	$ 50,877	$ -	$ 50,877	7	7	7	7
Licensed Practical Nurse	$ 34,554	$ -	$ 34,554	4	4	4	4
PACU Administrative Clerk	$ 28,387	$ -	$ 28,387	1	1	1	1
Nurse Anesthesia Provider	$ 160,000	$ -	$ 160,000	7	7	7	7
Housekeeping	$ 29,000	$ -	$ 29,000	2	2	2	2
	$ -	$ -	$ -				
		$ -	$ -				
Total CONTRACT SUPPORT STAFF Cost per Year				$ 2,642,956.00	$ 2,642,956.00	$ 2,642,956.00	$ 2,642,956.00

Change in Marginal (Supply) Costs

		Year 1	Year 2	Year 3	Year 4
*Change in Outpatient Workload		2169	2169	2169	2169
Marginal cost Per Outpatient Unit		$1,096.00	$1,096.00	$1,096.00	$1,096.00
Total Outpatient Marginal Costs		$2,377,224	$2,377,224	$2,377,224	$2,377,224
*Change in Inpatient Workload		0	0	0	0
Marginal cost Per Inpatient Unit					
Total Inpatient Marginal Costs		$0	$0	$0	$0
Total Change in Marginal Cost		$2,377,224	$2,377,224	$2,377,224	$2,377,224

Change in Capital Costs - Equipment (Fiscal Analysis)

	Year 1	Year 2	Year 3	Year 4
Fill in the yellow areas, the calculations are automatic.				
New Patient Care Equip (Non-disposable)	**Input Whole $ Cost**			
	$4,436,130	$0	$0	$0
Outfitting Expense - Planning factor of 20%	$4,436,130			
- Outfitting includes:				
1) Same-Day Surgery equipment				
2) Operating Room Equipment				
3) Anesthesia Equipment				
3) CMS Equipment				
4) Furniture				
Specialty Equip	$0	$0	$0	$0
Write-in as needed				
Write-in as needed				
Write-in as needed				
Write-in as needed				
Write-in as needed				
Write-in as needed				
Computer Equip	$2,218,065	$0	$0	$0
Automation Outfitting - Planning factor of 10%	$2,218,065			
- Outfitting includes:				
1) Computers				
2) Printers				
3) Network Printers				
4) Facsimile Machine				
5) Photo Copier				
6) Telephone Instruments (Single Line)				
7) Telephone Instruments (P-Sets)				
8) Line Cards (Single Line)				
9) Line Cards (P-Sets)				
10) Communication - Voice/Data				
11) Communication - Switch Boxes				
12) Local Service Requests				
Write-in as needed				
Write-in as needed				
Write-in as needed				
Write-in as needed				
Write-in as needed				
Write-in as needed				
Capital Investment Totals	$6,654,195	$0	$0	$0

Change in Capital Costs - Facility Mods (Fiscal Analysis)

	Year 1	Year 2	Year 3	Year 4
Fill in the yellow areas, the calculations are automatic. Input whole $ amounts				
Facility	$27,725,813	$0	$0	$0
Construction Cost - 7ORs	$22,180,650			
Design Expense (10% of construction)	$2,218,065			
Displacement Expense (15% of constructi	$3,327,098			
	$0			
Other/Misc	$0	$0	$0	$0
Write-in as needed	$0			
Write-in as needed				
Write-in as needed				
Write-in as needed				
Capital Investment Totals	$27,725,813	$0	$0	$0

Savings or Cost

Data entry in Yellow highlighted cells.	

Note: Your investment or funding request is usually considered your up-front, one-time start up money needed to fund your project.
Note: Indicate equipment costs related to Patient Safety and Near Miss issues

Please indicate you answer to the following questions	YES	NO
Equipment costs are related to Patient Safety and Near Miss issues		
Investment or funding request is up-front, one time start-up money needed to fund your project.		
Space available in existing Bldg		
Facilities Manager (FM) has reviewed project to identify maintenance/construction req.		
Cost is feasible.		
Maintenance or construction has re-occuring maintenance cost to facility.		
Re-occuring maintenance cost to facility is appropriate.		
DA 4283 (Work Order) has been generated for project.		
Work to be accomplished is targeted to be completed in timely manner.		
Accomplishment priority is appropriate.		
FM has signed-off paperwork ensuring identification.		
Aligns with BSC IP-12.		

Change in Third Party Collections

OHI %	Collection %	Year 1	Year 2	Year 3	Year 4
10%	60%				
Change in MTF ADD Outpatient Visits		2,169	2,169	2,169	2,169
Avg ADD Outpatient TPC		$1,498.32	$1,498.32	$1,498.32	$1,498.32
(Visits) X (OHI) X (Collection %)		$3,249,856	$3,249,856	$3,249,856	$3,249,856
Potential MTF TPC for ADD Care		$194,991	$194,991	$194,991	$194,991
Change in MTF NADD Outpatient Visits		0	0	0	0
Avg NADD Outpatient TPC					
(Visits) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for NADD Care		$0	$0	$0	$0
Change in Outpatient TPC		$194,991	$194,991	$194,991	$194,991
Change in MTF ADD Admissions		0	0	0	0
Avg ADD Inpatient Institutional TPC					
(Admissions) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for ADD Care		$0	$0	$0	$0
Change in MTF NADD Admissions		0	0	0	0
Avg NADD Inpatient Institutional TPC					
(Admissions) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for NADD Care		$0	$0	$0	$0
Potential Change in Inpatient TPC		$0	$0	$0	$0
Total change in TPC		**$194,991**	**$194,991**	**$194,991**	**$194,991**

REVISED FINANCING						
COST RECAPTURE SAVINGS - ADD			Year 1	Year 2	Year 3	Year 4
PSC RECAPTURE OF OUTPATIENT WORKLOAD						
		BASELINE (Current PSC*) OUTPATIENT VISITS				
		TARGET (Additional Recapture) OUTPATIENT VISITS	1,423			
		Average Professional (Outpatient) CMAC or Outpatient PSC Cost	$679.14			
		Average Institutional Component for APVs	$819.18			
		Total Outpatient Visit Recapture Savings	$2,132,109	$0	$0	$0
PSC RECAPTURE OF INPATIENT WORKLOAD						
		BASELINE (Current PSC) ADMISSIONS				
		TARGET (Additional Recapture) ADMISSIONS				
		Average Inpatient Institutional CMAC or PSC Inpatient Cost				
		Inpatient Institutional Recapture Savings	$0	$0	$0	$0
		Change in MTF ADD Admissions (Target Admissions)	0	0	0	0
		Negotiated Professional Fee Per Admission				
		Inpatient Professional Recapture Savings	$0	$0	$0	$0
		Total Inpatient Recapture Savings	$0	$0	$0	$0
Total RECAPTURE COST SAVINGS			**$2,132,109**	**$0**	**$0**	**$0**

REVISED FINANCING						
COST AVOIDANCE - ADD			Year 1	Year 2	Year 3	Year 4
PSC COST AVOIDANCE FOR OUTPATIENT WORKLOAD						
		BASELINE (Current PSC*) OUTPATIENT VISITS				
		TARGET (Additional Avoidance) OUTPATIENT VISITS	746	2,169	2,169	2,169
		Average Professional (Outpatient) CMAC or Outpatient PSC Cost	$679.14	$679.14	$679.14	$679.14
		Average Institutional Component for APVs	$819.18	$819.18	$819.18	$819.18
		Total Outpatient Visit Cost Avoidance Savings	$1,117,747	$3,249,856	$3,249,856	$3,249,856
PSC RECAPTURE OF INPATIENT WORKLOAD						
		BASELINE (Current PSC) ADMISSIONS				
		TARGET (Additional Avoidance) ADMISSIONS				
		Average Inpatient Institutional CMAC or PSC Inpatient Cost				
		Inpatient Cost Avoidance Savings	$0	$0	$0	$0
		~~Change in MTF ADD Admissions (Target Admissions)~~	~~0~~	~~0~~	~~0~~	~~0~~
		Negotiated Professional Fee Per Admission				
		Inpatient Professional Cost Avoidance Savings	$0	$0	$0	$0
		Total Inpatient Cost Avoidance Savings	$0	$0	$0	$0
Total COST AVOIDANCE SAVINGS			**$1,117,747**	**$3,249,856**	**$3,249,856**	**$3,249,856**

#REF!
#REF!

Performance & Financial Summary

Linked areas of This section are automatically updated as you complete the rest of the BCA

Recapture Targets (Workload)

	36-Mo Total	Year 1	Year 2	Year 3	Year 4
ADMISSIONS					
Supp Care (AD)		0	0	0	0
CHAMPUS (All)		0	0	0	0
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	0	0	0	0	0
CLINIC VISITS					
Supp Care (AD)		0	0	0	0
CHAMPUS (All)		0	0	0	0
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	0	0	0	0	0
SURG. PROCEDURES					
Supp Care (AD)		0	0	0	0
CHAMPUS		749	749	749	749
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	2,996	749	749	749	749

ENTER Projected Start Date 1-Oct-06

Payback Period (Breakeven) 0.8 Years or 9 Months

Projected Payback Date 11-Jul-07

What is the project buying?

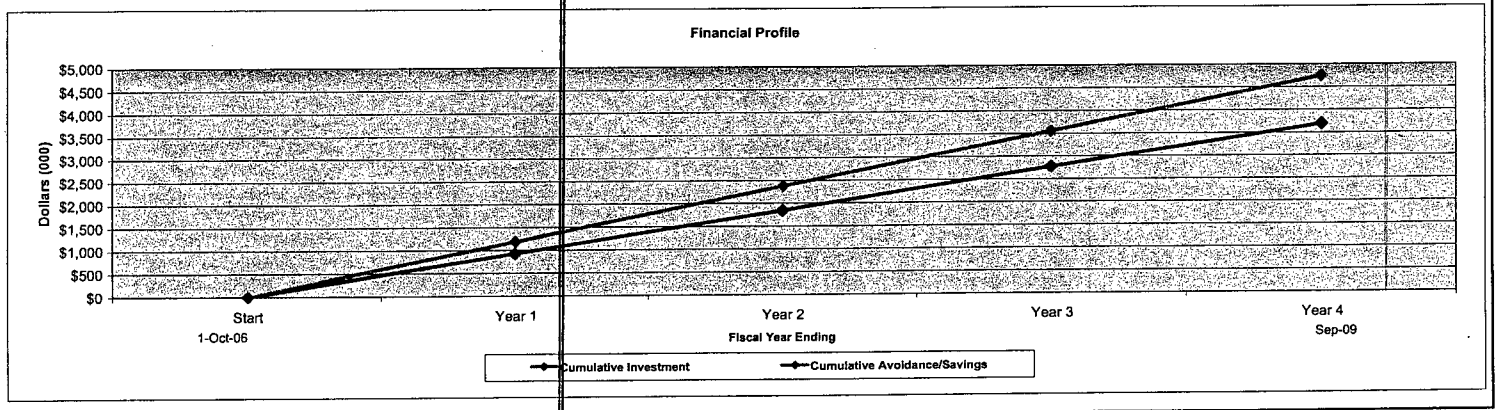
Provide a short description of what this initiative is purchasing i.e.
number and types of staff
number and types of providers
number and description of equipment
number and types of supplies

Non-Inflated

Net Savings & Loss Calculations ($000)

			Year 1	Year 2	Year 3	Year 4	36-Month Program Total <--- = 36 Months
Benefit to Investment Ratio (BIR) value < 1 is a Negative ROI	Net Present Value (NPV)						
	Total Investment OUTFLOW	Personnel (Linked)	103.4	103.4	103.4	103.4	
		Travel (Linked)	0.0	0.0	0.0	0.0	
		Leases/Rents (Linked)	0.0	0.0	0.0	0.0	
		Capital Contracts (Linked)	0.0	0.0	0.0	0.0	
		Marg. Supplies (Linked)	817.6	817.6	817.6	817.6	
		Equipment (Linked)	0.0	0.0	0.0	0.0	
		Facility Mod (Linked)	0.0	0.0	0.0	0.0	
		Misc. (Linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	Outflow Total
1.29	$3,598.0	Requirement	921.0	921.0	921.0	921.0	$3,684.1
	Benefits Cost Avoidance	TNEX - RF ADD (Linked)	0.0	1,117.7	1,117.7	1,117.7	
		TNEX - RF NADD (Linked)	0.0	0.0	0.0	0.0	
		CHAMPUS A&O (linked)	0.0	0.0	0.0	0.0	
		TFL > 65 (linked)	0.0	0.0	0.0	0.0	
		Supp Care (linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	
	$3,248.7	Cost Avoidance	0.0	1,117.7	1,117.7	1,117.7	
	Benefits PSC Savings	TNEX - RF ADD (Linked)	1,117.7	0.0	0.0	0.0	
		TNEX - RF NADD (Linked)	0.0	0.0	0.0	0.0	
		CHAMPUS A&O (linked)	0.0	0.0	0.0	0.0	
		TFL > 65 (linked)	0.0	0.0	0.0	0.0	
		Supp Care (linked)	0.0	0.0	0.0	0.0	
Discount Factor	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	
1.60%	$1,117.7	PSC Cost Savings	1,117.7	0.0	0.0	0.0	
	Benefits Direct to MTF	3rd Party Collect. (linked)	67.1	67.1	67.1	67.1	
		Other (Not Linked)	0.0	0.0	0.0	0.0	
		Other (Not Linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	Inflow Total
	$262.0	Direct MTF Savings	67.1	67.1	67.1	67.1	$4,739.2
							36-Mo ROI
	Net Savings or (Loss)		263.8	263.8	263.8	263.8	$1,055.2
	Venture Capital Funding Requirement		854.0	854.0	854.0	854.0	$3,415.8

	Year 1	Year 2	Year 3	Year 4
Cumulative Investment	921.0	1,842.0	2,763.1	3,684.1
Cumulative Avoidance/Savings	1,184.8	2,369.6	3,554.4	4,739.2
Cumulative Net Savings or (Loss)	263.8	527.6	791.4	1,055.2



Appendix Y

Quad Sheet

Change in Workload in the MTF				
Enter Fiscal Year (FY__) in each column	Year 1	Year 2	Year 3	Year 4
Enter the Number of Month for each FY activities are expected to occur				
Workload SHIFT Avoidance - Work that will move to the network if BCA is not put in place All MCSC 1.0 Activities & For All "Non-Psych" Workload for MCSC 2.0 Activities				
Outpatient ADD Visits/SDS		746	746	746
Outpatient NADD Visits/SDS				
Total CHAMPUS Visits	0	746	746	746
Outpatient AD Visits/SDS				
Total Outpatient Visits/SDS	0	746	746	746
Inpatient ADD Admissions				
Inpatient NADD Admissions				
Total CHAMPUS Admissions	0	0	0	0
Inpatient AD Admissions				
Total Admissions	0	0	0	0
New Workload - Increase in MTF workload if BCA is put in place (Recapture) All MCSC 1.0 Activities & For All "Non-Psych" Workload for MCSC 2.0 Activities				
Ambulatory Surgical Cases Recaptured	746	0	0	0
Outpatient NADD Visits/SDS				
Total CHAMPUS Visits	746	0	0	0
Outpatient AD Visits/SDS				
Total Outpatient Visits/SDS	746	0	0	0
Inpatient ADD Admissions				
Inpatient NADD Admissions				
Total CHAMPUS Admissions	0	0	0	0
Inpatient AD Admissions				
Total Admissions	0	0	0	0
Workload SHIFT Avoidance - Work that will move to the network if BCA is not put in place Workload Worksheet for MCSC 2.0 Activities (Psych Workload) Regions 1, 2 & 5 Only				
Ambulatory Surgical Cases Recaptured				
Outpatient Psych NADD Visits/SDS				
Total CHAMPUS Psych Visits	0	0	0	0
Outpatient Psych AD Visits/SDS				
Total Psych Outpatient Visits/SDS	0	0	0	0
Inpatient Psych ADD Admissions				
Inpatient Psych NADD Admissions				
Total CHAMPUS Psych Admissions	0	0	0	0
Inpatient Psych AD Admissions				
Total Psych Admissions	0	0	0	0
New Workload - Increase in MTF workload if BCA is put in place (Recapture) Workload Worksheet for MCSC 2.0 Activities (Psych Workload) Regions 1, 2 & 5 Only				
Ambulatory Surgical Cases Recaptured				
Outpatient Psych NADD Visits/SDS				
Total CHAMPUS Psych Visits	0	0	0	0
Outpatient Psych AD Visits/SDS				
Total Psych Outpatient Visits/SDS	0	0	0	0
Inpatient Psych ADD Admissions				
Inpatient Psych NADD Admissions				
Total CHAMPUS Psych Admissions	0	0	0	0
Inpatient Psych AD Admissions				
Total Psych Admissions	0	0	0	0
Workload for MCSC 2.0 Enrollment Activities Regions 1, 2 & 5 Only				
ADD Enrollments				
NADD Enrollments				
Total Enrollments	0	0	0	0

Personnel Estimates

GS Personnel	Year 1	Year 2	Year 3	Year 4
Number of Provider FTEs	0	0	0	0
GS Cost of Providers	$ -	$ -	$ -	$ -
Number of Support Staff FTEs	0	0	0	0
GS Cost of Support Staff	$ -	$ -	$ -	$ -
Total GS Cost				
Contract Personnel				
Number of Provider FTEs	0	0	0	0
Contract Cost of Providers	$ -	$ -	$ -	$ -
Number of Support Staff FTEs	2	2	2	2
Contract Cost of Support Staff	$ 103,402	$ 103,402	$ 103,402	$ 103,402
Total Contract Cost	$ 103,402	$ 103,402	$ 103,402	$ 103,402
Total Personnel Cost	$ 103,402	$ 103,402	$ 103,402	$ 103,402

Select Local → RUS

Estimated Benefit % **25%**

Instructions

Locality Rate: **10.90%**

Local Description: **REST OF UNITED STATES**

* Note that civilian GS pay rates represent General Schedule pay rates (step 5) plus any locality pay. Additional cost of Benefits are added for all GS employees.

Salary Table 2004-GS **2004 General Schedule Including Locality Pay**

Provider GS Cost					Enter the # of GS Providers FTEs for Each Year			
Description	GS	Step 5 + Benefits	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
Total GS PROVIDER Cost per Year					$ -	$ -	$ -	$ -

Contract Providers				Enter the # of Contract Provider FTEs for Each Year			
Description	Salary	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
Total CONTRACT PROVIDER Cost per Year				$ -	$ -	$ -	$ -

Support Staff GS Cost					Enter the # of GS Support Staff FTEs for Each Year			
Description	GS	Step 5 + Benefits	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
Total GS SUPPORT STAFF Cost per Year					$ -	$ -	$ -	$ -

Contract Support Staff				Enter # of Contract Support Staff FTEs for Each Year			
Description	Salary	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
Operating Room Nurse	$ 51,701	$ -	$ 51,701	2	2	2	2
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
Total CONTRACT SUPPORT STAFF Cost per Year				$ 103,402.00	$ 103,402.00	$ 103,402.00	$ 103,402.00

Change in Marginal (Supply) Costs

		Year 1	Year 2	Year 3	Year 4
*Change in Outpatient Workload		746	746	746	746
Marginal cost Per Outpatient Unit		$1,096.00	$1,096.00	$1,096.00	$1,096.00
Total Outpatient Marginal Costs		$817,616	$817,616	$817,616	$817,616
*Change in Inpatient Workload		0	0	0	0
Marginal cost Per Inpatient Unit					
Total Inpatient Marginal Costs		$0	$0	$0	$0
Total Change in Marginal Cost		$817,616	$817,616	$817,616	$817,616

Change in Third Party Collections

OHI %	Collection %	Year 1	Year 2	Year 3	Year 4
10%	60%				
Change in MTF ADD Outpatient Visits		746	746	746	746
Avg ADD Outpatient TPC		$1,498.32	$1,498.32	$1,498.32	$1,498.32
(Visits) X (OHI) X (Collection %)		$1,117,747	$1,117,747	$1,117,747	$1,117,747
Potential MTF TPC for ADD Care		$67,065	$67,065	$67,065	$67,065
Change in MTF NADD Outpatient Visits		0	0	0	0
Avg NADD Outpatient TPC					
(Visits) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for NADD Care		$0	$0	$0	$0
Change in Outpatient TPC		$67,065	$67,065	$67,065	$67,065
Change in MTF ADD Admissions		0	0	0	0
Avg ADD Inpatient Institutional TPC					
(Admissions) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for ADD Care		$0	$0	$0	$0
Change in MTF NADD Admissions		0	0	0	0
Avg NADD Inpatient Institutional TPC					
(Admissions) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for NADD Care		$0	$0	$0	$0
Potential Change in Inpatient TPC		$0	$0	$0	$0
Total change in TPC		**$67,065**	**$67,065**	**$67,065**	**$67,065**

REVISED FINANCING					
COST RECAPTURE SAVINGS - ADD			**Year 1**	**Year 2**	**Year 3**	**Year 4**
PSC RECAPTURE OF OUTPATIENT WORKLOAD						
		BASELINE (Current PSC*) OUTPATIENT VISITS				
		TARGET (Additional Recapture) OUTPATIENT VISITS	746			
	Average Professional (Outpatient) CMAC or Outpatient PSC Cost		$679.14			
		Average Institutional Component for APVs	$819.18			
		Total Outpatient Visit Recapture Savings	$1,117,747	$0	$0	$0
PSC RECAPTURE OF INPATIENT WORKLOAD						
		BASELINE (Current PSC) ADMISSIONS				
		TARGET (Additional Recapture) ADMISSIONS				
	Average Inpatient Institutional CMAC or PSC Inpatient Cost					
		Inpatient Institutional Recapture Savings	$0	$0	$0	$0
		Change in MTF ADD Admissions (Target Admissions)	0	0	0	0
		Negotiated Professional Fee Per Admission				
		Inpatient Professional Recapture Savings	$0	$0	$0	$0
		Total Inpatient Recapture Savings	$0	$0	$0	$0
Total RECAPTURE COST SAVINGS			**$1,117,747**	**$0**	**$0**	**$0**

REVISED FINANCING					
COST AVOIDANCE - ADD			**Year 1**	**Year 2**	**Year 3**	**Year 4**
PSC COST AVOIDANCE FOR OUTPATIENT WORKLOAD						
		BASELINE (Current PSC*) OUTPATIENT VISITS				
		TARGET (Additional Avoidance) OUTPATIENT VISITS		746	746	746
	Average Professional (Outpatient) CMAC or Outpatient PSC Cost			$679.14	$679.14	$679.14
		Average Institutional Component for APVs		$819.18	$819.18	$819.18
		Total Outpatient Visit Cost Avoidance Savings	$0	$1,117,747	$1,117,747	$1,117,747
PSC RECAPTURE OF INPATIENT WORKLOAD						
		BASELINE (Current PSC) ADMISSIONS				
		TARGET (Additional Avoidance) ADMISSIONS				
	Average Inpatient Institutional CMAC or PSC Inpatient Cost					
		Inpatient Cost Avoidance Savings	$0	$0	$0	$0
		~~Change in MTF ADD Admissions (Target Admissions)~~	~~0~~	~~0~~	~~0~~	~~0~~
		Negotiated Professional Fee Per Admission				
		Inpatient Professional Cost Avoidance Savings	$0	$0	$0	$0
		Total Inpatient Cost Avoidance Savings	$0	$0	$0	$0
Total COST AVOIDANCE SAVINGS			**$0**	**$1,117,747**	**$1,117,747**	**$1,117,747**

#REF!
#REF!

Performance & Financial Summary

Linked areas of This section are automatically updated as you complete the rest of the BCA

Recapture Targets (Workload)

	36-Mo Total	Year 1	Year 2	Year 3	Year 4
ADMISSIONS					
Supp Care (AD)		0	0	0	0
CHAMPUS (All)		0	0	0	0
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	0	0	0	0	0
CLINIC VISITS					
Supp Care (AD)		0	0	0	0
CHAMPUS (All)		0	0	0	0
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	0	0	0	0	0
SURG. PROCEDURES					
Supp Care (AD)		0	0	0	0
CHAMPUS		2,169	2,169	2,169	2,169
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	8,676	2,169	2,169	2,169	2,169

ENTER Projected Start Date: 1-Oct-06

Payback Period (Breakeven): 0.0 Years or 0 Months

Projected Payback Date: Exceeds 36 Months

What is the project buying?

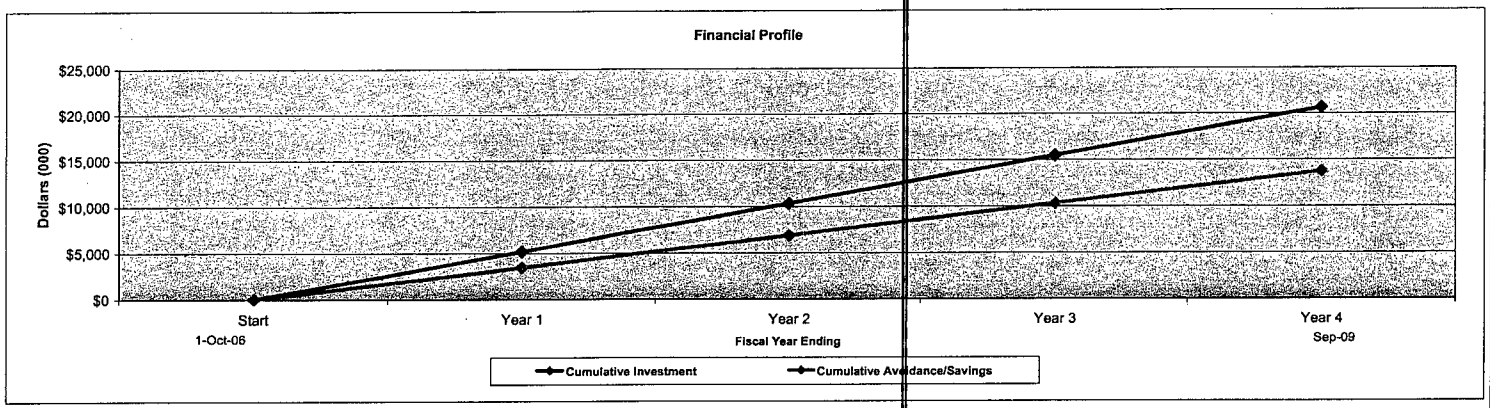
Provide a short description of what this initiative is purchasing i.e.
number and types of staff
number and types of providers
number and description of equipment
number and types of supplies

Net Savings & Loss Calculations ($000)

Non-Inflated

	Net Present Value (NPV)						36-Month Program Total <-- = 36 Months
Benefit to Investment Ratio (BIR) value < 1 is a Negative ROI	Total Investment OUTFLOW	Personnel (Linked)	1,920.0	1,920.0	1,920.0	1,920.0	
		Travel (Linked)	0.0	0.0	0.0	0.0	
		Leases/Rents (Linked)	3,240.0	3,240.0	3,240.0	3,240.0	
		Capital Contracts (Linked)	0.0	0.0	0.0	0.0	
		Marg. Supplies (Linked)	0.0	0.0	0.0	0.0	
		Equipment (Linked)	0.0	0.0	0.0	0.0	
		Facility Mgt (Linked)	0.0	0.0	0.0	0.0	
		Misc. (Linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	Outflow Total
0.67	$20,157.5	Requirement	5,160.0	5,160.0	5,160.0	5,160.0	$20,640.0
	Benefits Cost Avoidance	TNEX - RF ADD (Linked)	1,117.7	3,249.9	3,249.9	3,249.9	
		TNEX - RF NADD (Linked)	0.0	0.0	0.0	0.0	
		CHAMPUS A&O (linked)	0.0	0.0	0.0	0.0	
		TFL > 65 (Linked)	0.0	0.0	0.0	0.0	
		Supp Care (linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	
	$10,563.5	Cost Avoidance	1,117.7	3,249.9	3,249.9	3,249.9	
	Benefits PSC Savings	TNEX - RF ADD (Linked)	2,132.1	0.0	0.0	0.0	
		TNEX - RF NADD (Linked)	0.0	0.0	0.0	0.0	
		CHAMPUS A&O (linked)	0.0	0.0	0.0	0.0	
		TFL > 65 (Linked)	0.0	0.0	0.0	0.0	
		Supp Care (linked)	0.0	0.0	0.0	0.0	
Discount Factor	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	
1.60%	$2,132.1	PSC Cost Savings	2,132.1	0.0	0.0	0.0	
	Benefits Direct to MTF	3rd Party Collect. (linked)	195.0	195.0	195.0	195.0	
		Other (Not Linked)	0.0	0.0	0.0	0.0	
		Other (Not Linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	Inflow Total
	$761.7	Direct MTF Savings	195.0	195.0	195.0	195.0	$13,779.4
							36-Mo ROI
	Net Savings or (Loss)		(1,715.2)	(1,715.2)	(1,715.2)	(1,715.2)	($6,860.6)
	Venture Capital Funding Requirement		4,965.0	4,965.0	4,965.0	4,965.0	$19,860.0

	Year 1	Year 2	Year 3	Year 4
Cumulative Investment	5,160.0	10,320.0	15,480.0	20,640.0
Cumulative Avoidance/Savings	3,444.8	6,889.7	10,334.5	13,779.4
Cumulative Net Savings or (Loss)	(1,715.2)	(3,430.3)	(5,145.5)	(6,860.6)



Appendix 2

Change in Workload in the MTF				
Enter Fiscal Year (FY__) in each column	Year 1	Year 2	Year 3	Year 4
Enter the Number of Month for each FY activities are expected to occur				
Workload SHIFT Avoidance : Work that will move to the network if BCA is not put in place All MCSC 1.0 Activities & For All "Non-Psych" Workload for MCSC 2.0 Activities				
Ambulatory Surgery Cases (APVs)	746			
Outpatient NADD Visits/SDS				
Total CHAMPUS Visits	746	0	0	0
Outpatient AD Visits/SDS				
Total Outpatient Visits/SDS	746	0	0	0
Inpatient ADD Admissions				
Inpatient NADD Admissions				
Total CHAMPUS Admissions	0	0	0	0
Inpatient AD Admissions				
Total Admissions	0	0	0	0
New Workload - Increase in MTF workload if BCA is put in place (Recapture) All MCSC 1.0 Activities & For All "Non-Psych" Workload for MCSC 2.0 Activities				
Ambulatory Surgical Cases Recaptured	1423	2169	2169	2169
Outpatient NADD Visits/SDS				
Total CHAMPUS Visits	1423	2169	2169	2169
Outpatient AD Visits/SDS				
Total Outpatient Visits/SDS	1423	2169	2169	2169
Inpatient ADD Admissions				
Inpatient NADD Admissions				
Total CHAMPUS Admissions	0	0	0	0
Inpatient AD Admissions				
Total Admissions	0	0	0	0
Workload SHIFT Avoidance : Work that will move to the network if BCA is not put in place Workload Worksheet for MCSC 2.0 Activities (Psych Workload) Regions 1, 2 & 5 Only				
Outpatient Psych ADD Visits/SDS				
Outpatient Psych NADD Visits/SDS				
Total CHAMPUS Psych Visits	0	0	0	0
Outpatient Psych AD Visits/SDS				
Total Psych Outpatient Visits/SDS	0	0	0	0
Inpatient Psych ADD Admissions				
Inpatient Psych NADD Admissions				
Total CHAMPUS Psych Admissions	0	0	0	0
Inpatient Psych AD Admissions				
Total Psych Admissions	0	0	0	0
New Workload - Increase in MTF workload if BCA is put in place (Recapture) Workload Worksheet for MCSC 2.0 Activities (Psych Workload) Regions 1, 2 & 5 Only				
Outpatient Psych ADD Visits/SDS				
Outpatient Psych NADD Visits/SDS				
Total CHAMPUS Psych Visits	0	0	0	0
Outpatient Psych AD Visits/SDS				
Total Psych Outpatient Visits/SDS	0	0	0	0
Inpatient Psych ADD Admissions				
Inpatient Psych NADD Admissions				
Total CHAMPUS Psych Admissions	0	0	0	0
Inpatient Psych AD Admissions				
Total Psych Admissions	0	0	0	0
Workload for MCSC 2.0 Enrollment Activities Regions 1, 2 & 5 Only				
ADD Enrollments				
NADD Enrollments				
Total Enrollments	0	0	0	0

Personnel Estimates

GS Cost	Year 1	Year 2	Year 3	Year 4
Number of Provider FTEs	0	0	0	0
GS Cost of Providers	$ -	$ -	$ -	$ -
Number of Support Staff FTEs	0	0	0	0
GS Cost of Support Staff	$ -	$ -	$ -	$ -
Contract Cost				
Contract Personnel				
Number of Provider FTEs	6	6	6	6
Contract Cost of Providers	$ 1,920,000	$ 1,920,000	$ 1,920,000	$ 1,920,000
Number of Support Staff FTEs	0	0	0	0
Contract Cost of Support Staff	$ -	$ -	$ -	$ -
Total Contract Cost	$ 1,920,000	$ 1,920,000	$ 1,920,000	$ 1,920,000
Total Personnel Cost	$ 1,920,000	$ 1,920,000	$ 1,920,000	$ 1,920,000

Select Local → RUS

Instructions

Estimated Benefit % 25%

Locality Rate: 10.90%

Local Description: REST OF UNITED STATES

* Note that civilian GS pay rates represent General Schedule pay rates (step 5) plus any locality pay. Additional cost of Benefits are added for all GS employees.

Salary Table 2004-GS **2004 General Schedule Including Locality Pay**

Provider GS Cost					Enter the # of GS Providers FTEs for Each Year			
Description	GS	Step 5 + Benefits	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
Total GS PROVIDER Cost per Year					$ -	$ -	$ -	$ -

Contract Providers				Enter the # of Contract Provider FTEs for Each Year			
Description	Salary	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
Anesthesiologist	$ 320,000	$ -	$ 320,000	6	6	6	6
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
Total CONTRACT PROVIDER Cost per Year				$ 1,920,000.00	$ 1,920,000.00	$ 1,920,000.00	$ 1,920,000.00

Support Staff GS Cost					Enter the # of GS Support Staff FTEs for Each Year			
Description	GS	Step 5 + Benefits	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
Total GS SUPPORT STAFF Cost per Year					$ -	$ -	$ -	$ -

Contract Support Staff				Enter # of Contract Support Staff FTEs for Each Year			
Description	Salary	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
Total CONTRACT SUPPORT STAFF Cost per Year				$ -	$ -	$ -	$ -

Capital Costs - Leases & Contracts (Fiscal Analysis)

		Year 1	Year 2	Year 3	Year 4
Fill in the yellow areas, the calculations are automatic. Input whole $ amounts					
Facility/Equipment Lease Cost	**Annual Cost**	$3,240,000	$3,240,000	$3,240,000	$3,240,000
Lease of an Ambulatory Surgery Center	**Charge per hour based on estimate from Health South**	$1,500	$1,500	$1,500	$1,500
- Cost is $1400 per hour	**Number of hrs per day (0700-1700, with 1 hr for lunch)**	9	9	9	9
- Cost includes staff, medical equipment,	**Planning factor for number of days per yr.**	240	240	240	240
non-medical equipment, operating rooms,					
and scheduling surery patients					
Estimate 9 hours for use of the operating					
rooms. This allows a 0700-1700 hr					
operating, less one hour for lunch					
New & Modified Contracts Cost		$0	$0	$0	$0
Write-in as needed					
Write-in as needed					
Write-in as needed					
Write-in as needed					
Capital Investment Totals	**Total Annual Cost**	$3,240,000	$3,240,000	$3,240,000	$3,240,000

Change in Third Party Collections

OHI %	Collection %	Year 1	Year 2	Year 3	Year 4
10%	65%				
Change in MTF ADD Outpatient Visits		2,169	2,169	2,169	2,169
Avg ADD Outpatient TPC		$1,498.32	$1,498.32	$1,498.32	$1,498.32
(Visits) X (OHI) X (Collection %)		$3,249,856	$3,249,856	$3,249,856	$3,249,856
Potential MTF TPC for ADD Care		$194,991	$194,991	$194,991	$194,991
Change in MTF NADD Outpatient Visits		0	0	0	0
Avg NADD Outpatient TPC					
(Visits) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for NADD Care		$0	$0	$0	$0
Change in Outpatient TPC		$194,991	$194,991	$194,991	$194,991
Change in MTF ADD Admissions		0	0	0	0
Avg ADD Inpatient Institutional TPC					
(Admissions) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for ADD Care		$0	$0	$0	$0
Change in MTF NADD Admissions		0	0	0	0
Avg NADD Inpatient Institutional TPC					
(Admissions) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for NADD Care		$0	$0	$0	$0
Potential Change in Inpatient TPC		$0	$0	$0	$0
Total change in TPC		**$194,991**	**$194,991**	**$194,991**	**$194,991**

REVISED FINANCING					
COST RECAPTURE SAVINGS - ADD			**Year 1**	**Year 2**	**Year 3**	**Year 4**
PSC RECAPTURE OF OUTPATIENT WORKLOAD						
		BASELINE (Current PSC*) OUTPATIENT VISITS				
		TARGET (Additional Recapture) OUTPATIENT VISITS	1,423			
	Average Professional (Outpatient) CMAC or Outpatient PSC Cost		$679.14			
		Average Institutional Component for APVs	$819.18			
		Average Institutional Component for APVs				
		Total Outpatient Visit Recapture Savings	$2,132,109	$0	$0	$0
PSC RECAPTURE OF INPATIENT WORKLOAD						
		BASELINE (Current PSC) ADMISSIONS				
		TARGET (Additional Recapture) ADMISSIONS				
	Average Inpatient Institutional CMAC or PSC Inpatient Cost					
		Inpatient Institutional Recapture Savings	$0	$0	$0	$0
		Change in MTF ADD Admissions (Target Admissions)	0	0	0	0
		Negotiated Professional Fee Per Admission				
		Inpatient Professional Recapture Savings	$0	$0	$0	$0
		Total Inpatient Recapture Savings	$0	$0	$0	$0
Total RECAPTURE COST SAVINGS			**$2,132,109**	**$0**	**$0**	**$0**

REVISED FINANCING					
COST AVOIDANCE - ADD			**Year 1**	**Year 2**	**Year 3**	**Year 4**
PSC COST AVOIDANCE FOR OUTPATIENT WORKLOAD						
		BASELINE (Current PSC*) OUTPATIENT VISITS				
		TARGET (Additional Avoidance) OUTPATIENT VISITS	746	2,169	2,169	2,169
	Average Professional (Outpatient) CMAC or Outpatient PSC Cost		$679.14	$679.14	$679.14	$679.14
		Average Institutional Component for APVs	$819.18	$819.18	$819.18	$819.18
		Total Outpatient Visit Cost Avoidance Savings	$1,117,747	$3,249,856	$3,249,856	$3,249,856
PSC RECAPTURE OF INPATIENT WORKLOAD						
		BASELINE (Current PSC) ADMISSIONS				
		TARGET (Additional Avoidance) ADMISSIONS				
	Average Inpatient Institutional CMAC or PSC Inpatient Cost					
		Inpatient Cost Avoidance Savings	$0	$0	$0	$0
		Change in MTF ADD Admissions (Target Admissions)	0	0	0	0
		Negotiated Professional Fee Per Admission				
		Inpatient Professional Cost Avoidance Savings	$0	$0	$0	$0
		Total Inpatient Cost Avoidance Savings	$0	$0	$0	$0
Total COST AVOIDANCE SAVINGS			**$1,117,747**	**$3,249,856**	**$3,249,856**	**$3,249,856**

#REF!
#REF!

Performance & Financial Summary *Linked areas of This section are automatically updated as you complete the rest of the BCA*

Recapture Targets (Workload)

	36-Mo Total	Year 1	Year 2	Year 3	Year 4
ADMISSIONS					
Supp Care (AD)		0	0	0	0
CHAMPUS (All)		0	0	0	0
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	0	0	0	0	0
CLINIC VISITS					
Supp Care (AD)		0	0	0	0
CHAMPUS (All)		0	0	0	0
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	0	0	0	0	0
SURG. PROCEDURES					
Supp Care (AD)		0	0	0	0
CHAMPUS		1,419	1,419	1,419	1,419
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	5,676	1,419	1,419	1,419	1,419

ENTER Projected Start Date 1-Oct-06

Payback Period (Breakeven) 0.0 Years or 0 Months

Projected Payback Date Exceeds 36 Months

What is the project buying?

Provide a short description of what this initiative is purchasing i.e.
number and types of staff
number and types of providers
number and description of equipment
number and types of supplies

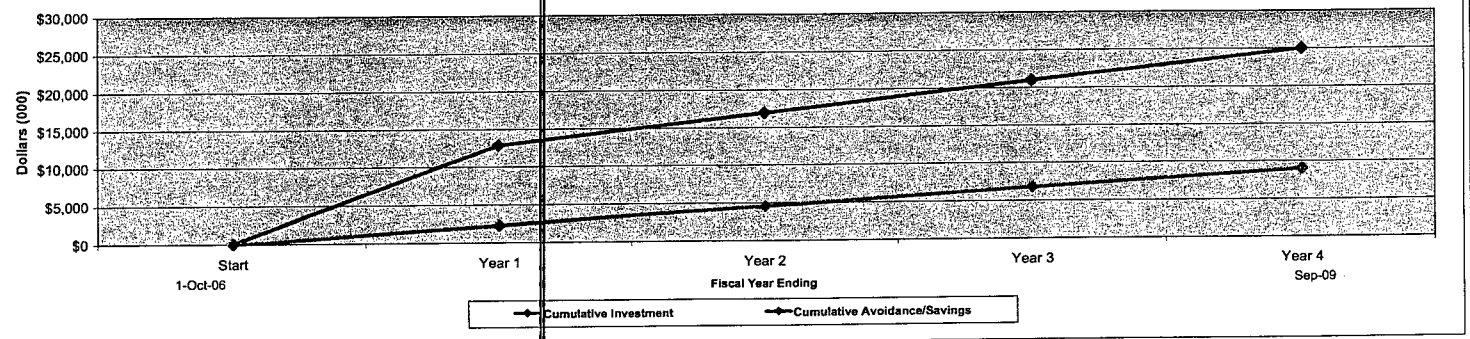
Net Savings & Loss Calculations ($000)

Non-Inflated

	Net Present Value (NPV)		Year 1	Year 2	Year 3	Year 4	36-Month Program Total <--- = 36 Months
Benefit to Investment Ratio (BIR) value < 1 is a Negative ROI	Total Investment OUTFLOW	Personnel (Linked)	2,464.3	2,464.3	2,464.3	2,464.3	
		Travel (Linked)	0.0	0.0	0.0	0.0	
		Leases/Rents (Linked)	0.0	0.0	0.0	0.0	
		Capital Contracts (Linked)	0.0	0.0	0.0	0.0	
		Marg. Supplies (Linked)	1,559.6	1,559.6	1,559.6	1,559.6	
		Equipment (Linked)	4,200.5	4.7	4.7	4.7	
		Facility Mod (Linked)	4,658.0	0.0	0.0	0.0	
		Misc. (Linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	Outflow Total
0.36	$24,591.5	Requirement	12,882.4	4,028.6	4,028.6	4,028.6	$24,968.2
	Benefits Cost Avoidance	TNEX - RF ADD (Linked)	0.0	2,132.1	2,132.1	2,132.1	
		TNEX - RF NADD (Linked)	0.0	0.0	0.0	0.0	
		CHAMPUS A&O (linked)	0.0	0.0	0.0	0.0	
		TFL > 65 (linked)	0.0	0.0	0.0	0.0	
		Supp Care (linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	
	$6,197.0	Cost Avoidance	0.0	2,132.1	2,132.1	2,132.1	
	Benefits PSC Savings	TNEX - RF ADD (Linked)	2,132.1	0.0	0.0	0.0	
		TNEX - RF NADD (Linked)	0.0	0.0	0.0	0.0	
		CHAMPUS A&O (linked)	0.0	0.0	0.0	0.0	
		TFL > 65 (linked)	0.0	0.0	0.0	0.0	
		Supp Care (linked)	0.0	0.0	0.0	0.0	
Discount Factor 1.60%	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	
	$2,132.1	PSC Cost Savings	2,132.1	0.0	0.0	0.0	
	Benefits Direct to MTF	3rd Party Collect. (linked)	127.9	127.9	127.9	127.9	
		Other (Not Linked)	0.0	0.0	0.0	0.0	
		Other (Not Linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	Inflow Total
	$499.7	Direct MTF Savings	127.9	127.9	127.9	127.9	$9,040.1
							36-Mo ROI
	Net Savings or (Loss)		(10,622.4)	(1,768.6)	(1,768.6)	(1,768.6)	($15,928.0)
	Venture Capital Funding Requirement		12,754.5	3,900.7	3,900.7	3,900.7	$24,456.5

	Year 1	Year 2	Year 3	Year 4
Cumulative Investment	12,882.4	16,911.0	20,939.6	24,968.2
Cumulative Avoidance/Savings	2,260.0	4,520.1	6,780.1	9,040.1
Cumulative Net Savings or (Loss)	(10,622.4)	(12,390.9)	(14,159.5)	(15,928.0)

Financial Profile



Appendix AA

Change in Workload in the MTF				
Enter Fiscal Year (FY__) in each column	Year 1	Year 2	Year 3	Year 4
Enter the Number of Month for each FY activities are expected to occur				
Workload SHIFT Avoidance - Work that will move to the network if BCA is not put in place All MCSC 1.0 Activities & For All "Non-Psych" Workload for MCSC 2.0 Activities				
Ambulatory Surgical Cases Recaptured		1423	1423	1423
Outpatient NADD Visits/SDS				
Total CHAMPUS Visits	0	1423	1423	1423
Outpatient AD Visits/SDS				
Total Outpatient Visits/SDS	0	1423	1423	1423
Inpatient ADD Admissions				
Inpatient NADD Admissions				
Total CHAMPUS Admissions	0	0	0	0
Inpatient AD Admissions				
Total Admissions	0	0	0	0
New Workload - Increase in MTF workload if BCA is put in place (Recapture) All MCSC 1.0 Activities & For All "Non-Psych" Workload for MCSC 2.0 Activities				
Ambulatory Surgical Cases Recaptured	1423			
Outpatient NADD Visits/SDS				
Total CHAMPUS Visits	1423	0	0	0
Outpatient AD Visits/SDS				
Total Outpatient Visits/SDS	1423	0	0	0
Inpatient ADD Admissions				
Inpatient NADD Admissions				
Total CHAMPUS Admissions	0	0	0	0
Inpatient AD Admissions				
Total Admissions	0	0	0	0
Workload SHIFT Avoidance - Work that will move to the network if BCA is not put in place Workload Worksheet for MCSC 2.0 Activities (Psych Workload) Regions 1, 2 & 5 Only				
Outpatient Psych ADD Visits/SDS				
Outpatient Psych NADD Visits/SDS				
Total CHAMPUS Psych Visits	0	0	0	0
Outpatient Psych AD Visits/SDS				
Total Psych Outpatient Visits/SDS	0	0	0	0
Inpatient Psych ADD Admissions				
Inpatient Psych NADD Admissions				
Total CHAMPUS Psych Admissions	0	0	0	0
Inpatient Psych AD Admissions				
Total Psych Admissions	0	0	0	0
New Workload - Increase in MTF workload if BCA is put in place (Recapture) Workload Worksheet for MCSC 2.0 Activities (Psych Workload) Regions 1, 2 & 5 Only				
Outpatient Psych ADD Visits/SDS				
Outpatient Psych NADD Visits/SDS				
Total CHAMPUS Psych Visits	0	0	0	0
Outpatient Psych AD Visits/SDS				
Total Psych Outpatient Visits/SDS	0	0	0	0
Inpatient Psych ADD Admissions				
Inpatient Psych NADD Admissions				
Total CHAMPUS Psych Admissions	0	0	0	0
Inpatient Psych AD Admissions				
Total Psych Admissions	0	0	0	0
Workload for MCSC 2.0 Enrollment Activities Regions 1, 2 & 5 Only				
ADD Enrollments				
NADD Enrollments				
Total Enrollments	0	0	0	0

Personnel Estimates

GS Personnel	Year 1	Year 2	Year 3	Year 4
Number of Provider FTEs	0	0	0	0
GS Cost of Providers	$ -	$ -	$ -	$ -
Number of Support Staff FTEs	0	0	0	0
GS Cost of Support Staff	$ -	$ -	$ -	$ -
Total GS Cost	$	$	$	$
Contract Personnel				
Number of Provider FTEs	1	1	1	1
Contract Cost of Providers	$ 320,000	$ 320,000	$ 320,000	$ 320,000
Number of Support Staff FTEs	35	35	35	35
Contract Cost of Support Staff	$ 2,144,297	$ 2,144,297	$ 2,144,297	$ 2,144,297
Total Contract Cost	$ 2,464,297	$ 2,464,297	$ 2,464,297	$ 2,464,297
Total Personnel Cost	$ 2,464,297	$ 2,464,297	$ 2,464,297	$ 2,464,297

Select Local → RUS

Estimated Benefit % **25%**

Locality Rate: **10.90%**

Instructions

Local Description: **REST OF UNITED STATES**

* Note that civilian GS pay rates represent General Schedule pay rates (step 5) plus any locality pay. Additional cost of Benefits are added for all GS employees.

Salary Table 2004-GS **2004 General Schedule Including Locality Pay**

Provider GS Cost					Enter the # of GS Providers FTEs for Each Year			
Description	**GS**	**Step 5 + Benefits**	**Specialty Pay**	**Total Pay**	**Year 1**	**Year 2**	**Year 3**	**Year 4**
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
Total GS PROVIDER Cost per Year					$ -	$ -	$ -	$ -

Contract Providers				Enter the # of Contract Provider FTEs for Each Year			
Description	**Salary**	**Specialty Pay**	**Total Pay**	**Year 1**	**Year 2**	**Year 3**	**Year 4**
Anesthesiologist	$ 320,000	$ -	$ 320,000	1	1	1	1
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
Total CONTRACT PROVIDER Cost per Year				$ 320,000.00	$ 320,000.00	$ 320,000.00	$ 320,000.00

Support Staff GS Cost					Enter the # of GS Support Staff FTEs for Each Year			
Description	**GS**	**Step 5 + Benefits**	**Specialty Pay**	**Total Pay**	**Year 1**	**Year 2**	**Year 3**	**Year 4**
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
Total GS SUPPORT STAFF Cost per Year					$ -	$ -	$ -	$ -

Contract Support Staff				Enter # of Contract Support Staff FTEs for Each Year			
Description	**Salary**	**Specialty Pay**	**Total Pay**	**Year 1**	**Year 2**	**Year 3**	**Year 4**
Operating Room Nurse	$ 51,701	$ -	$ 51,701	6	6	6	6
Operating Room Technician	$ 32,037	$ -	$ 32,037	8	8	8	8
Operating Room Scheduler (Clerk)	$ 28,387	$ -	$ 28,387	1	1	1	1
Recovery Room Nurse	$ 50,877	$ -	$ 50,877	7	7	7	7
Licensed Practical Nurse	$ 34,554	$ -	$ 34,554	4	4	4	4
PACU (recovery room) Clerk	$ 28,387	$ -	$ 28,387	1	1	1	1
Housekeeping Personnel	$ 33,333	$ -	$ 33,333	2	2	2	2
Nurse Anesthesia Provider	$ 160,000	$ -	$ 160,000	6	6	6	6
	$ -	$ -	$ -				
	$ -	$ -	$ -				
Total CONTRACT SUPPORT STAFF Cost per Year				$ 2,144,297.00	$ 2,144,297.00	$ 2,144,297.00	$ 2,144,297.00

Change in Marginal (Supply) Costs

	Year 1	Year 2	Year 3	Year 4
*Change in Outpatient Workload	1423	1423	1423	1423
Marginal cost Per Outpatient Unit	$1,096.00	$1,096.00	$1,096.00	$1,096.00
Total Outpatient Marginal Costs	$1,559,608	$1,559,608	$1,559,608	$1,559,608
*Change in Inpatient Workload	0	0	0	0
Marginal cost Per Inpatient Unit				
Total Inpatient Marginal Costs	$0	$0	$0	$0
Total Change in Marginal Cost	$1,559,608	$1,559,608	$1,559,608	$1,559,608

Change in Capital Costs - Equipment (Fiscal Analysis)

	Year 1	Year 2	Year 3	Year 4
Fill in the yellow areas, the calculations are automatic.				
New Patient Care Equip (Non-disposable)	Input Whole $ Cost			
	$0	$0	$0	$0
Exam Tables				
Lights				
Scopes				
Adjustable Stools				
Dopplers				
Adjustable Chairs				
Diagnostic tables				
Other				
Specialty Equip	$4,043,306	$0	$0	$0
Same Day Surgery & Recovery Rm	$762,395			
Operating Room	$2,677,147			
Anesthesia Equipment	$573,764			
CMS	$30,000			
Computer Equip	$10,520	$4,690	$4,690	$4,690
New Computers	$4,690	$4,690	$4,690	$4,690
Network Printers	$4,650			
Slave printers	$1,180			
LAN Hookups				
CHCS Terminals	$0			
Other				
Non-Clinical Equip	$6,661	$0	$0	$0
Telephone Instruments (Single Line)	$275			
~~Telephone Instruments (P-Sets)~~	~~$1,500~~			
Local Service Requests	$3,786.00			
Line Cards (Single Line)	$500			
Line Cards (P-Sets)	$600			
Other/Misc	$140,000	$0	$0	$0
Communication - Voice/Data	$130,000			
Communication - Switch Boxes	$10,000			
Capital Investment Totals	$4,200,487	$4,690	$4,690	$4,690

Appendix AA Venture-Capital - 5th Floor

Change in Capital Costs - Facility Mods (Fiscal Analysis)

	Year 1	Year 2	Year 3	Year 4
Fill in the yellow areas, the calculations are automatic. Input whole $ amounts				
Facility	$4,000,000	$0	$0	$0
Backlogged/Urgent RPM				
Facilities Renovation	$4,000,000			
New Facilities/Site Prep Cost				
Other				
Other/Misc	$658,000	$0	$0	$0
Displacement of UBO (Furniture)	$5,000			
Displacement of Multi-D Clinic (Furniture)	$3,000			
Construction for new UBO area	$650,000			
Capital Investment Totals	$4,658,000	$0	$0	$0
Savings or Cost				

Data entry in Yellow highlighted cells.

Note: Your investment or funding request is usually considered your up-front, one-time start up money needed to fund your project.
Note: Indicate equipment costs related to Patient Safety and Near Miss issues

Please indicate you answer to the following questions	YES	NO
Equipment costs are related to Patient Safety and Near Miss issues		
Investment or funding request is up-front, one time start-up money needed to fund your project.		
Space available in existing Bldg		
Facilities Manager (FM) has reviewed project to identify maintenance/construction req.		
Cost is feasible.		
Maintenance or construction has re-occuring maintenance cost to facility.		
Re-occuring maintenance cost to facility is appropriate.		
DA 4283 (Work Order) has been generated for project.		
Work to be accomplished is targeted to be completed in timely manner.		
Accomplishment priority is appropriate.		
FM has signed-off paperwork ensuring identification.		
Aligns with BSC IP-12.		

Change in Third Party Collections

OHI %	Collection %	Year 1	Year 2	Year 3	Year 4
10%	60%				
Change in MTF ADD Outpatient Visits		1,423	1,423	1,423	1,423
Avg ADD Outpatient TPC		$1,498.32	$1,498.32	$1,498.32	$1,498.32
(Visits) X (OHI) X (Collection %)		$2,132,109	$2,132,109	$2,132,109	$2,132,109
Potential MTF TPC for ADD Care		$127,927	$127,927	$127,927	$127,927
Change in MTF NADD Outpatient Visits		0	0	0	0
Avg NADD Outpatient TPC					
(Visits) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for NADD Care		$0	$0	$0	$0
Change in Outpatient TPC		$127,927	$127,927	$127,927	$127,927
Change in MTF ADD Admissions		0	0	0	0
Avg ADD Inpatient Institutional TPC					
(Admissions) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for ADD Care		$0	$0	$0	$0
Change in MTF NADD Admissions		0	0	0	0
Avg NADD Inpatient Institutional TPC					
(Admissions) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for NADD Care		$0	$0	$0	$0
Potential Change in Inpatient TPC		$0	$0	$0	$0
Total change in TPC		**$127,927**	**$127,927**	**$127,927**	**$127,927**

REVISED FINANCING					
COST RECAPTURE SAVINGS - ADD			Year 1	Year 2	Year 3	Year 4
PSC RECAPTURE OF OUTPATIENT WORKLOAD						
		BASELINE (Current PSC*) OUTPATIENT VISITS				
		TARGET (Additional Recapture) OUTPATIENT VISITS	1,423			
		Average Professional (Outpatient) CMAC or Outpatient PSC Cost	$679.14			
		Average Institutional Component for APVs	$819.18			
		Total Outpatient Visit Recapture Savings	$2,132,109	$0	$0	$0
PSC RECAPTURE OF INPATIENT WORKLOAD						
		BASELINE (Current PSC) ADMISSIONS				
		TARGET (Additional Recapture) ADMISSIONS				
		Average Inpatient Institutional CMAC or PSC Inpatient Cost				
		Inpatient Institutional Recapture Savings	$0	$0	$0	$0
		Change in MTF ADD Admissions (Target Admissions)	0	0	0	0
		Negotiated Professional Fee Per Admission				
		Inpatient Professional Recapture Savings	$0	$0	$0	$0
		Total Inpatient Recapture Savings	$0	$0	$0	$0
Total RECAPTURE COST SAVINGS			**$2,132,109**	**$0**	**$0**	**$0**

REVISED FINANCING					
COST AVOIDANCE - ADD			Year 1	Year 2	Year 3	Year 4
PSC COST AVOIDANCE FOR OUTPATIENT WORKLOAD						
		BASELINE (Current PSC*) OUTPATIENT VISITS				
		TARGET (Additional Avoidance) OUTPATIENT VISITS		1,423	1,423	1,423
		Average Professional (Outpatient) CMAC or Outpatient PSC Cost		$679.14	$679.14	$679.14
		Average Institutional Component for APVs		$819.18	$819.18	$819.18
		Total Outpatient Visit Cost Avoidance Savings	$0	$2,132,109	$2,132,109	$2,132,109
PSC RECAPTURE OF INPATIENT WORKLOAD						
		BASELINE (Current PSC) ADMISSIONS				
		TARGET (Additional Avoidance) ADMISSIONS				
		Average Inpatient Institutional CMAC or PSC Inpatient Cost				
		Inpatient Cost Avoidance Savings	$0	$0	$0	$0
		Change in MTF ADD Admissions (Target Admissions)	0	0	0	0
		Negotiated Professional Fee Per Admission				
		Inpatient Professional Cost Avoidance Savings	$0	$0	$0	$0
		Total Inpatient Cost Avoidance Savings	$0	$0	$0	$0
Total COST AVOIDANCE SAVINGS			**$0**	**$2,132,109**	**$2,132,109**	**$2,132,109**

#REF!
#REF!

Performance & Financial Summary

Linked areas of This section are automatically updated as you complete the rest of the BCA

Recapture Targets (Workload)

	36-Mo Total	Year 1	Year 2	Year 3	Year 4
ADMISSIONS					
Supp Care (AD)		0	0	0	0
CHAMPUS (All)		0	0	0	0
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	0	0	0	0	0
CLINIC VISITS					
Supp Care (AD)		0	0	0	0
CHAMPUS (All)		0	0	0	0
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	0	0	0	0	0
SURG. PROCEDURES					
Supp Care (AD)		0	0	0	0
CHAMPUS		2,165	2,165	2,165	2,165
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	8,660	2,165	2,165	2,165	2,165

ENTER Projected Start Date: 1-Oct-06

Payback Period (Breakeven): 0.0 Years or 0 Months

Projected Payback Date: Exceeds 36 Months

What is the project buying?

Provide a short description of what this initiative is purchasing i.e.
number and types of staff
number and types of providers
number and description of equipment
number and types of supplies

Net Savings & Loss Calculations ($000)

Non-Inflated

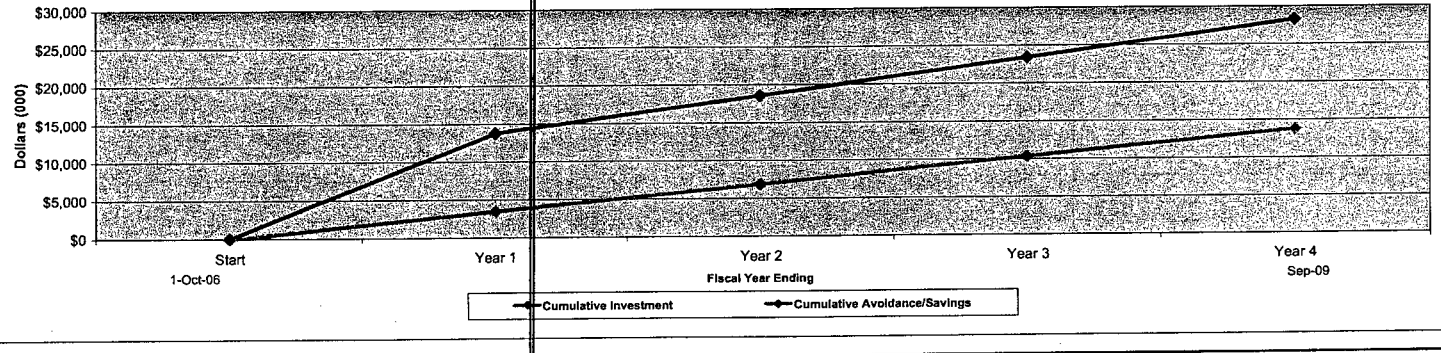
Benefit to Investment Ratio (BIR) value < 1 is a Negative ROI: 0.48

Discount Factor: 1.60%

	Net Present Value (NPV)		Year 1	Year 2	Year 3	Year 4	36-Month Program Total <--- = 36 Months
		Personnel (Linked)	2,464.3	2,464.3	2,464.3	2,464.3	
		Travel (Linked)	0.0	0.0	0.0	0.0	
		Leases/Rents (Linked)	0.0	0.0	0.0	0.0	
		Capital Contracts (Linked)	0.0	0.0	0.0	0.0	
		Marg. Supplies (Linked)	2,377.2	2,377.2	2,377.2	2,377.2	
	Total Investment OUTFLOW	Equipment (Linked)	4,200.5	4.7	4.7	4.7	
		Facility Mod (Linked)	4,658.0	0.0	0.0	0.0	
		Misc. (Linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	Outflow Total
	$27,785.5	Requirement	13,700.0	4,846.2	4,846.2	4,846.2	$28,238.6
	Benefits Cost Avoidance	TNEX - RF ADD (Linked)	1,117.7	3,249.9	3,249.9	3,249.9	
		TNEX - RF NADD (Linked)	0.0	0.0	0.0	0.0	
		CHAMPUS A&O (linked)	0.0	0.0	0.0	0.0	
		TFL > 65 (linked)	0.0	0.0	0.0	0.0	
		Supp Care (linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	
	$10,563.5	Cost Avoidance	1,117.7	3,249.9	3,249.9	3,249.9	
	Benefits PSC Savings	TNEX - RF ADD (Linked)	2,132.1	0.0	0.0	0.0	
		TNEX - RF NADD (Linked)	0.0	0.0	0.0	0.0	
		CHAMPUS A&O (linked)	0.0	0.0	0.0	0.0	
		TFL > 65 (linked)	0.0	0.0	0.0	0.0	
		Supp Care (linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	
	$2,132.1	PSC Cost Savings	2,132.1	0.0	0.0	0.0	
	Benefits Direct to MTF	3rd Party Collect. (linked)	195.0	195.0	195.0	195.0	
		Other (Not Linked)	0.0	0.0	0.0	0.0	
		Other (Not Linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	Inflow Total
	$761.7	Direct MTF Savings	195.0	195.0	195.0	195.0	$13,779.4
							36-Mo ROI
	Net Savings or (Loss)		(10,255.2)	(1,401.4)	(1,401.4)	(1,401.4)	($14,459.3)
	Venture Capital Funding Requirement		13,505.0	4,651.2	4,651.2	4,651.2	$27,458.7

	Year 1	Year 2	Year 3	Year 4
Cumulative Investment	13,700.0	18,546.2	23,392.4	28,238.6
Cumulative Avoidance/Savings	3,444.8	6,889.7	10,334.5	13,779.4
Cumulative Net Savings or (Loss)	(10,255.2)	(11,656.5)	(13,057.9)	(14,459.3)

Financial Profile



Appendix BB

Change in Workload in the MTF				
Enter Fiscal Year (FY__) in each column	Year 1	Year 2	Year 3	Year 4
Enter the Number of Month for each FY activities are expected to occur				
Workload SHIFT Avoidance - Work that will move to the network if BCA is not put in place All MCSC 1.0 Activities & For All "Non-Psych" Workload for MCSC 2.0 Activities				
Ambulatory Surgerical Cases (Backlog)	746	2169	2169	2169
Outpatient NADD Visits/SDS				
Total CHAMPUS Visits	746	2169	2169	2169
Outpatient AD Visits/SDS				
Total Outpatient Visits/SDS	746	2169	2169	2169
Inpatient ADD Admissions				
Inpatient NADD Admissions				
Total CHAMPUS Admissions	0	0	0	0
Inpatient AD Admissions				
Total Admissions	0	0	0	0
New Workload - Increase in MTF workload if BCA is put in place (Recapture) All MCSC 1.0 Activities & For All "Non-Psych" Workload for MCSC 2.0 Activities				
Ambulatory Surgical Cases Recaptured	1423			
Outpatient NADD Visits/SDS				
Total CHAMPUS Visits	1423	0	0	0
Outpatient AD Visits/SDS				
Total Outpatient Visits/SDS	1423	0	0	0
Inpatient ADD Admissions				
Inpatient NADD Admissions				
Total CHAMPUS Admissions	0	0	0	0
Inpatient AD Admissions				
Total Admissions	0	0	0	0
Workload SHIFT Avoidance - Work that will move to the network if BCA is not put in place Workload Worksheet for MCSC 2.0 Activities (Psych Workload) Regions 1, 2 & 5 Only				
Outpatient Psych ADD Visits/SDS				
Outpatient Psych NADD Visits/SDS				
Total CHAMPUS Psych Visits	0	0	0	0
Outpatient Psych AD Visits/SDS				
Total Psych Outpatient Visits/SDS	0	0	0	0
Inpatient Psych ADD Admissions				
Inpatient Psych NADD Admissions				
Total CHAMPUS Psych Admissions	0	0	0	0
Inpatient Psych AD Admissions				
Total Psych Admissions	0	0	0	0
New Workload - Increase in MTF workload if BCA is put in place (Recapture) Workload Worksheet for MCSC 2.0 Activities (Psych Workload) Regions 1, 2 & 5 Only				
Outpatient Psych ADD Visits/SDS				
Outpatient Psych NADD Visits/SDS				
Total CHAMPUS Psych Visits	0	0	0	0
Outpatient Psych AD Visits/SDS				
Total Psych Outpatient Visits/SDS	0	0	0	0
Inpatient Psych ADD Admissions				
Inpatient Psych NADD Admissions				
Total CHAMPUS Psych Admissions	0	0	0	0
Inpatient Psych AD Admissions				
Total Psych Admissions	0	0	0	0
Workload for MCSC 2.0 Enrollment Activities Regions 1, 2 & 5 Only				
ADD Enrollments				
NADD Enrollments				
Total Enrollments	0	0	0	0

Personnel Estimates

GS Personnel	Year 1	Year 2	Year 3	Year 4
Number of Provider FTEs	0	0	0	0
GS Cost of Providers	$ -	$ -	$ -	$ -
Number of Support Staff FTEs	0	0	0	0
GS Cost of Support Staff	$ -	$ -	$ -	$ -
Contract Personnel				
Number of Provider FTEs	1	1	1	1
Contract Cost of Providers	$ 320,000	$ 320,000	$ 320,000	$ 320,000
Number of Support Staff FTEs	35	35	35	35
Contract Cost of Support Staff	$ 2,144,297	$ 2,144,297	$ 2,144,297	$ 2,144,297
Total Contract Cost	$ 2,464,297	$ 2,464,297	$ 2,464,297	$ 2,464,297
Total Personnel Cost	$ 2,464,297	$ 2,464,297	$ 2,464,297	$ 2,464,297

Select Local → RUS

Instructions

Estimated Benefit % 25%

Locality Rate: 10.90%

Local Description: REST OF UNITED STATES

* Note that civilian GS pay rates represent General Schedule pay rates (step 5) plus any locality pay. Additional cost of Benefits are added for all GS employees.

Salary Table 2004-GS **2004 General Schedule Including Locality Pay**

Provider GS Cost					Enter the # of GS Providers FTEs for Each Year			
Description	GS	Step 5 + Benefits	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
Total GS PROVIDER Cost per Year					$ -	$ -	$ -	$ -

Contract Providers				Enter the # of Contract Provider FTEs for Each Year			
Description	Salary	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
Anesthesiologist	$ 320,000	$ -	$ 320,000	1	1	1	1
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
Total CONTRACT PROVIDER Cost per Year				$ 320,000.00	$ 320,000.00	$ 320,000.00	$ 320,000.00

Support Staff GS Cost					Enter the # of GS Support Staff FTEs for Each Year			
Description	GS	Step 5 + Benefits	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
Total GS SUPPORT STAFF Cost per Year					$ -	$ -	$ -	$ -

Contract Support Staff				Enter # of Contract Support Staff FTEs for Each Year			
Description	Salary	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
Operating Room Nurse	$ 51,701	$ -	$ 51,701	6	6	6	6
Operating Room Technician	$ 32,037	$ -	$ 32,037	8	8	8	8
Operating Room Scheduler (Clerk)	$ 28,387	$ -	$ 28,387	1	1	1	1
Recovery Room Nurse	$ 50,877	$ -	$ 50,877	7	7	7	7
Licensed Practical Nurse	$ 34,554	$ -	$ 34,554	4	4	4	4
PACU (recovery room) Clerk	$ 28,387	$ -	$ 28,387	1	1	1	1
Housekeeping Personnel	$ 33,333	$ -	$ 33,333	2	2	2	2
Nurse Anesthesia Provider	$ 160,000	$ -	$ 160,000	6	6	6	6
		$ -	$ -				
	$ -	$ -	$ -				
Total CONTRACT SUPPORT STAFF Cost per Year				$ 2,144,297.00	$ 2,144,297.00	$ 2,144,297.00	$ 2,144,297.00

Change in Marginal (Supply) Costs

		Year 1	Year 2	Year 3	Year 4
*Change in Outpatient Workload		2169	2169	2169	2169
Marginal cost Per Outpatient Unit		$1,096.00	$1,096.00	$1,096.00	$1,096.00
Total Outpatient Marginal Costs		$2,377,224	$2,377,224	$2,377,224	$2,377,224
*Change in Inpatient Workload		0	0	0	0
Marginal cost Per Inpatient Unit					
Total Inpatient Marginal Costs		$0	$0	$0	$0
Total Change in Marginal Cost		$2,377,224	$2,377,224	$2,377,224	$2,377,224

Change in Capital Costs - Equipment (Fiscal Analysis)

	Year 1	Year 2	Year 3	Year 4
Fill in the yellow areas, the calculations are automatic.				
New Patient Care Equip (Non-disposable)	Input Whole $ Cost			
	$0	$0	$0	$0
Exam Tables				
Lights				
Scopes				
Adjustable Stools				
Dopplers				
Adjustable Chairs				
Diagnostic tables				
Other				
Specialty Equip	$4,043,306	$0	$0	$0
Same Day Surgery & Recovery Rm	$762,395			
Operating Room	$2,677,147			
Anesthesia Equipment	$573,764			
CMS	$30,000			
Computer Equip	$10,520	$4,690	$4,690	$4,690
New Computers	$4,690	$4,690	$4,690	$4,690
Network Printers	$4,650			
Slave printers	$1,180			
LAN Hookups				
CHCS Terminals	$0			
Other				
Non-Clinical Equip	$6,662	$0	$0	$0
Telephone Instruments (Single Line)	$275			
~~**Telephone Instruments (P-Sets)**~~	~~$1,500~~			
Local Service Requests	$3,787.00			
Line Cards (Single Line)	$500			
Line Cards (P-Sets)	$600			
Other/Misc	$140,000	$0	$0	$0
Communication - Voice/Data	$130,000			
Communication - Switch Boxes	$10,000			
Capital Investment Totals	$4,200,488	$4,690	$4,690	$4,690

Change in Capital Costs - Facility Mods (Fiscal Analysis)

	Year 1	Year 2	Year 3	Year 4
Fill in the yellow areas, the calculations are automatic. Input whole $ amounts				
Facility	$4,000,000	$0	$0	$0
Backlogged/Urgent RPM				
Facilities Renovation	$4,000,000			
New Facilities/Site Prep Cost				
Other				
Other/Misc	$658,000	$0	$0	$0
Displacement of UBO (Furniture)	$5,000			
Displacement of Multi-D Clinic (Furniture)	$3,000			
Construction of new UBO area	$650,000			
Capital Investment Totals	$4,658,000	$0	$0	$0

Savings or Cost

Data entry in Yellow highlighted cells.	

Note: Your investment or funding request is usually considered your up-front, one-time start up money needed to fund your project.
Note: Indicate equipment costs related to Patient Safety and Near Miss issues

Please indicate you answer to the following questions	YES	NO
Equipment costs are related to Patient Safety and Near Miss issues		
Investment or funding request is up-front, one time start-up money needed to fund your project.		
Space available in existing Bldg		
Facilities Manager (FM) has reviewed project to identify maintenance/construction req.		
Cost is feasible.		
Maintenance or construction has re-occuring maintenance cost to facility.		
Re-occuring maintenance cost to facility is appropriate.		
DA 4283 (Work Order) has been generated for project.		
Work to be accomplished is targeted to be completed in timely manner.		
Accomplishment priority is appropriate.		
FM has signed-off paperwork ensuring identification.		
Aligns with BSC IP-12.		

Change in Third Party Collections

OHI %	Collection %	Year 1	Year 2	Year 3	Year 4
10%	50%				
Change in MTF ADD Outpatient Visits		2,169	2,169	2,169	2,169
Avg ADD Outpatient TPC		$1,498.32	$1,498.32	$1,498.32	$1,498.32
(Visits) X (OHI) X (Collection %)		$3,249,856	$3,249,856	$3,249,856	$3,249,856
Potential MTF TPC for ADD Care		$194,991	$194,991	$194,991	$194,991
Change in MTF NADD Outpatient Visits		0	0	0	0
Avg NADD Outpatient TPC					
(Visits) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for NADD Care		$0	$0	$0	$0
Change in Outpatient TPC		$194,991	$194,991	$194,991	$194,991
Change in MTF ADD Admissions		0	0	0	0
Avg ADD Inpatient Institutional TPC					
(Admissions) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for ADD Care		$0	$0	$0	$0
Change in MTF NADD Admissions		0	0	0	0
Avg NADD Inpatient Institutional TPC					
(Admissions) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for NADD Care		$0	$0	$0	$0
Potential Change in Inpatient TPC		$0	$0	$0	$0
Total change in TPC		**$194,991**	**$194,991**	**$194,991**	**$194,991**

REVISED FINANCING					
COST RECAPTURE SAVINGS - ADD			Year 1	Year 2	Year 3	Year 4
PSC RECAPTURE OF OUTPATIENT WORKLOAD						
		BASELINE (Current PSC*) OUTPATIENT VISITS				
		TARGET (Additional Recapture) OUTPATIENT VISITS	1,423			
	Average Professional (Outpatient) CMAC or Outpatient PSC Cost		$679.14			
		Average Institutional Component for APVs	$819.18			
		Total Outpatient Visit Recapture Savings	$2,132,109	$0	$0	$0
PSC RECAPTURE OF INPATIENT WORKLOAD						
		BASELINE (Current PSC) ADMISSIONS				
		TARGET (Additional Recapture) ADMISSIONS				
	Average Inpatient Institutional CMAC or PSC Inpatient Cost					
		Inpatient Institutional Recapture Savings	$0	$0	$0	$0
		Change in MTF ADD Admissions (Target Admissions)	0	0	0	0
		Negotiated Professional Fee Per Admission				
		Inpatient Professional Recapture Savings	$0	$0	$0	$0
		Total Inpatient Recapture Savings	$0	$0	$0	$0
Total RECAPTURE COST SAVINGS			**$2,132,109**	**$0**	**$0**	**$0**

REVISED FINANCING					
COST AVOIDANCE - ADD			Year 1	Year 2	Year 3	Year 4
PSC COST AVOIDANCE FOR OUTPATIENT WORKLOAD						
		BASELINE (Current PSC*) OUTPATIENT VISITS				
		TARGET (Additional Avoidance) OUTPATIENT VISITS	746	2,169	2,169	2,169
	Average Professional (Outpatient) CMAC or Outpatient PSC Cost		$679.14	$679.14	$679.14	$679.14
		Average Institutional Component for APVs	$819.18	$819.18	$819.18	$819.18
		Total Outpatient Visit Cost Avoidance Savings	$1,117,747	$3,249,856	$3,249,856	$3,249,856
PSC RECAPTURE OF INPATIENT WORKLOAD						
		BASELINE (Current PSC) ADMISSIONS				
		TARGET (Additional Avoidance) ADMISSIONS				
	Average Inpatient Institutional CMAC or PSC Inpatient Cost					
		Inpatient Cost Avoidance Savings	$0	$0	$0	$0
		Change in MTF ADD Admissions (Target Admissions)	0	0	0	0
		Negotiated Professional Fee Per Admission				
		Inpatient Professional Cost Avoidance Savings	$0	$0	$0	$0
		Total Inpatient Cost Avoidance Savings	$0	$0	$0	$0
Total COST AVOIDANCE SAVINGS			**$1,117,747**	**$3,249,856**	**$3,249,856**	**$3,249,856**

#REF!
#REF!

Performance & Financial Summary

Linked areas of This section are automatically updated as you complete the rest of the BCA

Recapture Targets (Workload)

	36-Mo Total	Year 1	Year 2	Year 3	Year 4
ADMISSIONS					
Supp Care (AD)		0	0	0	0
CHAMPUS (All)		0	0	0	0
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	0	0	0	0	0
CLINIC VISITS					
Supp Care (AD)		0	0	0	0
CHAMPUS (All)		0	0	0	0
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	0	0	0	0	0
SURG. PROCEDURES					
Supp Care (AD)		0	0	0	0
CHAMPUS		2,165	2,165	2,165	2,165
Revised Financing		0	0	0	0
Over-65		0	0	0	0
Other		0	0	0	0
Sub-Total	8,660	2,165	2,165	2,165	2,165

ENTER Projected Start Date: 1-Oct-06

Payback Period (Breakeven): 0.0 Years or 0 Months

Projected Payback Date: Exceeds 36 Months

What is the project buying?

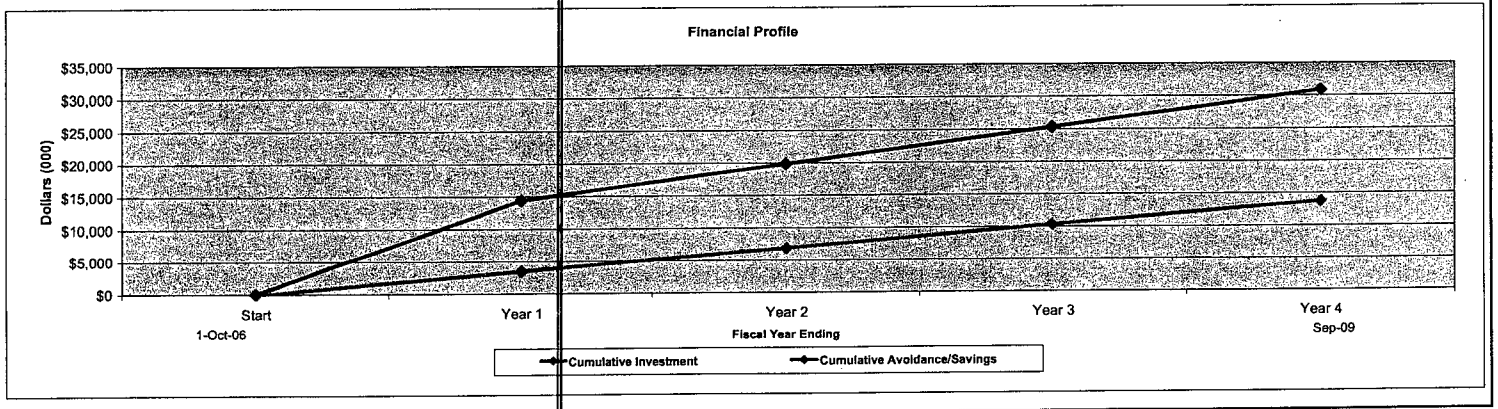
Provide a short description of what this initiative is purchasing i.e.
number and types of staff
number and types of providers
number and description of equipment
number and types of supplies

Non-Inflated

Net Savings & Loss Calculations ($000)

	Net Present Value (NPV)		Year 1	Year 2	Year 3	Year 4	36-Month Program Total <--- = 36 Months
Benefit to Investment Ratio (BIR) value < 1 is a Negative ROI	Total Investment OUTFLOW	Personnel (Linked)	3,104.3	3,104.3	3,104.3	3,104.3	
		Travel (Linked)	0.0	0.0	0.0	0.0	
		Leases/Rents (Linked)	0.0	0.0	0.0	0.0	
		Capital Contracts (Linked)	0.0	0.0	0.0	0.0	
		Marg. Supplies (Linked)	2,377.2	2,377.2	2,377.2	2,377.2	
		Equipment (Linked)	4,200.5	4.7	4.7	4.7	
		Facility Mod (Linked)	4,658.0	0.0	0.0	0.0	
		Misc. (Linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	Outflow Total
0.44	$30,285.7	Requirement	14,340.0	5,486.2	5,486.2	5,486.2	$30,798.6
	Benefits Cost Avoidance	TNEX - RF ADD (Linked)	1,117.7	3,249.9	3,249.9	3,249.9	
		TNEX - RF NADD (Linked)	0.0	0.0	0.0	0.0	
		CHAMPUS A&O (linked)	0.0	0.0	0.0	0.0	
		TFL > 65 (linked)	0.0	0.0	0.0	0.0	
		Supp Care (linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	
	$10,563.5	Cost Avoidance	1,117.7	3,249.9	3,249.9	3,249.9	
	Benefits PSC Savings	TNEX - RF ADD (Linked)	2,132.1	0.0	0.0	0.0	
		TNEX - RF NADD (Linked)	0.0	0.0	0.0	0.0	
		CHAMPUS A&O (linked)	0.0	0.0	0.0	0.0	
		TFL > 65 (linked)	0.0	0.0	0.0	0.0	
		Supp Care (linked)	0.0	0.0	0.0	0.0	
Discount Factor 1.60%	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	
	$2,132.1	PSC Cost Savings	2,132.1	0.0	0.0	0.0	
	Benefits Direct to MTF	3rd Party Collect. (linked)	195.0	195.0	195.0	195.0	
		Other (Not Linked)	0.0	0.0	0.0	0.0	
		Other (Not Linked)	0.0	0.0	0.0	0.0	
	NPV	Other (Not Linked)	0.0	0.0	0.0	0.0	Inflow Total
	$761.7	Direct MTF Savings	195.0	195.0	195.0	195.0	$13,779.4
							36-Mo ROI
Net Savings or (Loss)			(10,895.2)	(2,041.4)	(2,041.4)	(2,041.4)	($17,019.3)
Venture Capital Funding Requirement			14,145.0	5,291.2	5,291.2	5,291.2	$30,018.7

	Year 1	Year 2	Year 3	Year 4
Cumulative Investment	14,340.0	19,826.2	25,312.4	30,798.6
Cumulative Avoidance/Savings	3,444.8	6,889.7	10,334.5	13,779.4
Cumulative Net Savings or (Loss)	(10,895.2)	(12,936.5)	(14,977.9)	(17,019.3)



Appendix CC

Quad Sheet

Change in Workload in the MTF				
Enter Fiscal Year (FY__) in each column	Year 1	Year 2	Year 3	Year 4
Enter the Number of Month for each FY activities are expected to occur				
Workload SHIFT Avoidance - Work that will move to the network if BCA is not put in place - All MCSC 1.0 Activities & For All "Non-Psych" Workload for MCSC 2.0 Activities				
Ambulatory Surgerical Cases (Backlog)	746	2169	2169	2169
Outpatient NADD Visits/SDS				
Total CHAMPUS Visits	746	2169	2169	2169
Outpatient AD Visits/SDS				
Total Outpatient Visits/SDS	746	2169	2169	2169
Inpatient ADD Admissions				
Inpatient NADD Admissions				
Total CHAMPUS Admissions	0	0	0	0
Inpatient AD Admissions				
Total Admissions	0	0	0	0
New Workload - Increase in MTF workload if BCA is put in place (Recapture) - All MCSC 1.0 Activities & For All "Non-Psych" Workload for MCSC 2.0 Activities				
Ambulatory Surgical Cases Recaptured	1423			
Outpatient NADD Visits/SDS				
Total CHAMPUS Visits	1423	0	0	0
Outpatient AD Visits/SDS				
Total Outpatient Visits/SDS	1423	0	0	0
Inpatient ADD Admissions				
Inpatient NADD Admissions				
Total CHAMPUS Admissions	0	0	0	0
Inpatient AD Admissions				
Total Admissions	0	0	0	0
Workload SHIFT Avoidance - Work that will move to the network if BCA is not put in place - Workload Worksheet for MCSC 2.0 Activities (Psych Workload) - Regions 1, 2 & 5 Only				
Outpatient Psych ADD Visits/SDS				
Outpatient Psych NADD Visits/SDS				
Total CHAMPUS Psych Visits	0	0	0	0
Outpatient Psych AD Visits/SDS				
Total Psych Outpatient Visits/SDS	0	0	0	0
Inpatient Psych ADD Admissions				
Inpatient Psych NADD Admissions				
Total CHAMPUS Psych Admissions	0	0	0	0
Inpatient Psych AD Admissions				
Total Psych Admissions	0	0	0	0
New Workload - Increase in MTF workload if BCA is put in place (Recapture) - Workload Worksheet for MCSC 2.0 Activities (Psych Workload) - Regions 1, 2 & 5 Only				
Outpatient Psych ADD Visits/SDS				
Outpatient Psych NADD Visits/SDS				
Total CHAMPUS Psych Visits	0	0	0	0
Outpatient Psych AD Visits/SDS				
Total Psych Outpatient Visits/SDS	0	0	0	0
Inpatient Psych ADD Admissions				
Inpatient Psych NADD Admissions				
Total CHAMPUS Psych Admissions	0	0	0	0
Inpatient Psych AD Admissions				
Total Psych Admissions	0	0	0	0
Workload for MCSC 2.0 Enrollment Activities - Regions 1, 2 & 5 Only				
ADD Enrollments				
NADD Enrollments				
Total Enrollments	0	0	0	0

Personnel Estimates

	Year 1	Year 2	Year 3	Year 4
Number of Provider FTEs	0	0	0	0
GS Cost of Providers	$ -	$ -	$ -	$ -
Number of Support Staff FTEs	0	0	0	0
GS Cost of Support Staff	$ -	$ -	$ -	$ -
Contract Personnel				
Number of Provider FTEs	3	3	3	3
Contract Cost of Providers	$ 960,000	$ 960,000	$ 960,000	$ 960,000
Number of Support Staff FTEs	35	35	35	35
Contract Cost of Support Staff	$ 2,144,297	$ 2,144,297	$ 2,144,297	$ 2,144,297
Total Contract Cost	$ 3,104,297	$ 3,104,297	$ 3,104,297	$ 3,104,297
Total Personnel Cost	$ 3,104,297	$ 3,104,297	$ 3,104,297	$ 3,104,297

Select Local → RUS

Estimated Benefit % 25%

Locality Rate: 10.90%

Local Description: REST OF UNITED STATES

Instructions

* Note that civilian GS pay rates represent General Schedule pay rates (step 5) plus any locality pay. Additional cost of Benefits are added for all GS employees.

Salary Table 2004-GS **2004 General Schedule Including Locality Pay**

Provider GS Cost					Enter the # of GS Providers FTEs for Each Year			
Description	GS	Step 5 + Benefits	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
Total GS PROVIDER Cost per Year					$ -	$ -	$ -	$ -

Contract Providers				Enter the # of Contract Provider FTEs for Each Year			
Description	Salary	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
Anesthesiologist	$ 320,000	$ -	$ 320,000	3	3	3	3
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
	$ -	$ -	$ -				
Total CONTRACT PROVIDER Cost per Year				$ 960,000.00	$ 960,000.00	$ 960,000.00	$ 960,000.00

Support Staff GS Cost					Enter the # of GS Support Staff FTEs for Each Year			
Description	GS	Step 5 + Benefits	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
	1	$ 24,541	$ -	$ 24,541				
Total GS SUPPORT STAFF Cost per Year					$ -	$ -	$ -	$ -

Contract Support Staff				Enter # of Contract Support Staff FTEs for Each Year			
Description	Salary	Specialty Pay	Total Pay	Year 1	Year 2	Year 3	Year 4
Operating Room Nurse	$ 51,701	$ -	$ 51,701	6	6	6	6
Operating Room Technician	$ 32,037	$ -	$ 32,037	8	8	8	8
Operating Room Scheduler (Clerk)	$ 28,387	$ -	$ 28,387	1	1	1	1
Recovery Room Nurse	$ 50,877	$ -	$ 50,877	7	7	7	7
Licensed Practical Nurse	$ 34,554	$ -	$ 34,554	4	4	4	4
PACU (recovery room) Clerk	$ 28,387	$ -	$ 28,387	1	1	1	1
Housekeeping Personnel	$ 33,333	$ -	$ 33,333	2	2	2	2
Nurse Anesthesia Provider	$ 160,000	$ -	$ 160,000	6	6	6	6
		$ -	$ -				
	$ -	$ -	$ -				
Total CONTRACT SUPPORT STAFF Cost per Year				$ 2,144,297.00	$ 2,144,297.00	$ 2,144,297.00	$ 2,144,297.00

Change in Marginal (Supply) Costs

	Year 1	Year 2	Year 3	Year 4
*Change in Outpatient Workload	2169	2169	2169	2169
Marginal cost Per Outpatient Unit	$1,096.00	$1,096.00	$1,096.00	$1,096.00
Total Outpatient Marginal Costs	$2,377,224	$2,377,224	$2,377,224	$2,377,224
*Change in Inpatient Workload	0	0	0	0
Marginal cost Per Inpatient Unit				
Total Inpatient Marginal Costs	$0	$0	$0	$0
Total Change in Marginal Cost	$2,377,224	$2,377,224	$2,377,224	$2,377,224

Change in Capital Costs - Equipment (Fiscal Analysis)

	Year 1	Year 2	Year 3	Year 4
Fill in the yellow areas, the calculations are automatic.				
New Patient Care Equip (Non-disposable)	Input Whole $ Cost			
	$0	$0	$0	$0
Exam Tables				
Lights				
Scopes				
Adjustable Stools				
Dopplers				
Adjustable Chairs				
Diagnostic tables				
Other				
Specialty Equip	$4,043,306	$0	$0	$0
Same Day Surgery & Recovery Rm	$762,395			
Operating Room	$2,677,147			
Anesthesia Equipment	$573,764			
CMS	$30,000			
Computer Equip	$10,520	$4,690	$4,690	$4,690
New Computers	$4,690	$4,690	$4,690	$4,690
Network Printers	$4,650			
Slave printers	$1,180			
LAN Hookups				
CHCS Terminals	$0			
Other				
Non-Clinical Equip	$6,662	$0	$0	$0
Telephone Instruments (Single Line)	$275			
~~Telephone Instruments (P-Sets)~~	~~$1,500~~			
Local Service Requests	$3,787.00			
Line Cards (Single Line)	$500			
Line Cards (P-Sets)	$600			
Other/Misc	$140,000	$0	$0	$0
Communication - Voice/Data	$130,000			
Communication - Switch Boxes	$10,000			
Capital Investment Totals	$4,200,488	$4,690	$4,690	$4,690

Change in Capital Costs - Facility Mods (Fiscal Analysis)

	Year 1	Year 2	Year 3	Year 4
Fill in the yellow areas, the calculations are automatic. Input whole $ amounts				
Facility	$4,000,000	$0	$0	$0
Backlogged/Urgent RPM				
Facilities Renovation	$4,000,000			
New Facilities/Site Prep Cost				
Other				
Other/Misc	$658,000	$0	$0	$0
Displacement of UBO (Furniture)	$5,000			
Displacement of Multi-D Clinic (Furniture)	$3,000			
Construction of new UBO area	$650,000			
Capital Investment Totals	$4,658,000	$0	$0	$0

Savings or Cost

Data entry in Yellow highlighted cells.	

Note: Your investment or funding request is usually considered your up-front, one-time start up money needed to fund your project.
Note: Indicate equipment costs related to Patient Safety and Near Miss issues

Please indicate you answer to the following questions	YES	NO
Equipment costs are related to Patient Safety and Near Miss issues		
Investment or funding request is up-front, one time start-up money needed to fund your project.		
Space available in existing Bldg		
Facilities Manager (FM) has reviewed project to identify maintenance/construction req.		
Cost is feasible.		
Maintenance or construction has re-occuring maintenance cost to facility.		
Re-occuring maintenance cost to facility is appropriate.		
DA 4283 (Work Order) has been generated for project.		
Work to be accomplished is targeted to be completed in timely manner.		
Accomplishment priority is appropriate.		
FM has signed-off paperwork ensuring identification.		
Aligns with BSC IP-12.		

Change in Third Party Collections

OHI %	Collection %	Year 1	Year 2	Year 3	Year 4
10%	51%				
Change in MTF ADD Outpatient Visits		2,169	2,169	2,169	2,169
Avg ADD Outpatient TPC		$1,498.32	$1,498.32	$1,498.32	$1,498.32
(Visits) X (OHI) X (Collection %)		$3,249,856	$3,249,856	$3,249,856	$3,249,856
Potential MTF TPC for ADD Care		$194,991	$194,991	$194,991	$194,991
Change in MTF NADD Outpatient Visits		0	0	0	0
Avg NADD Outpatient TPC					
(Visits) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for NADD Care		$0	$0	$0	$0
Change in Outpatient TPC		$194,991	$194,991	$194,991	$194,991
Change in MTF ADD Admissions		0	0	0	0
Avg ADD Inpatient Institutional TPC					
(Admissions) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for ADD Care		$0	$0	$0	$0
Change in MTF NADD Admissions		0	0	0	0
Avg NADD Inpatient Institutional TPC					
(Admissions) X (OHI) X (Collection %)		$0	$0	$0	$0
Potential MTF TPC for NADD Care		$0	$0	$0	$0
Potential Change in Inpatient TPC		$0	$0	$0	$0
Total change in TPC		**$194,991**	**$194,991**	**$194,991**	**$194,991**